The Lettsomian Lectures
ON
CERTAIN DISEASES OF THE BLOOD-VESSELS.

Delivered before the Medical Society of London

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LECTURE II.[1]

Delivered on March 3rd.

ON OBLITERATIVE ARTERITIS.

MR. PRESIDENT AND GENTLEMEN,—I have chosen Obliterative Arteritis as the subject of this lecture, partly because of the obscurity in which its origin and causes are wrapped and partly because many of us are not so familiar with the main features of the disease as its frequency and gravity demand. It has barely found its way into our text-books, and it is still regarded as a very rare affection, and yet it cannot be so when from my own experience I can cite nine cases. The first important paper on the subject was written by Friedländer[2] in 1876, and was followed three years later by an article by Winiwater[3] giving a very careful description of the vessels in a case that had been under Billroth's care. Isolated cases were previously described by Jaesche[4] in 1865 and by Burow[5] in 1867. But it is undoubtedly to Friedländer that the credit belongs of recognising the condition and of working out its pathology. Since his paper was published many examples of the disease have been described, but very little further light has been thrown upon it. In 1884 I[6] recorded a well-marked case affecting the vessels of the upper limb in a man, 19 years of age, and at the same meeting of the Clinical Society the late Dr. W. B. Hadden[7] recorded another case of the disease in the hand and forearm of a woman, aged 35 years. The following year Mr. W. J. Walsham[8] reported to the same society a case of "acute obliterative arteritis" in the arm of a man, aged 52 years, but there is some room for doubt whether it belonged to the same category or to that of acute spreading arterial thrombosis. In 1891 I[9] read a paper on a case in which the disease caused symmetrical gangrene in the feet of a man, aged 43 years. In 1894 Saveran[10] recorded a case which began with an attack of phlebitis after which there were persistent pain and lameness in the left foot; in a year the toes became gangrenous and the leg was amputated. Saveran found endarteritis in the anterior tibial artery and endophlebitis in the accompanying veins. In 1896 Mr. Hutchinson[11] described four typical cases, and called attention to the importance of examining the state of the artery in the thigh in all cases of gangrene of the foot. In 1897 a Russian surgeon, Wwedensky,[12] wrote of the disease as peculiar to Russia and occurring in men between 19 and 60 years. In 1898 Mr. W. G. Spencer[13] recorded a very remarkable case in which the arteries in both legs and in one arm were simultaneously affected. Amputation through the middle of the left thigh was necessary, and Mr. Spencer gave an admirable account of the condition of the vessels in the amputated limb. About the same time Dr. W. A. Hollis[14] discussed the affection from its pathological side, and in 1900 Sternberg[15] in a long article described several cases of spontaneous gangrene in young people. The arteries of the limbs examined showed total obliteration of their lumen with very vascular connective tissue internal to the elastic lamina; and Gibert[16] described a case of symmetrical gangrene of the feet from arteritis.

Before narrating any of the cases of this disease that I have seen I wish to make one or two preliminary observations. And, first of all, I would remind you of the paramount part that the inner coat takes in all active physiological and pathological processes in arteries. The prime office of an artery is to maintain a patent channel for the flow of blood, and this depends upon the integrity of the tunica intima. The physiological obliteration of obsolete vessels, such as the ductus arteriosus and the umbilical vessels, and the narrowing of vessels in stumps are effected almost entirely by proliferation of cells of the intima—the middle and outer coats take no active share in the process. Similarly the repair of a wounded artery or of a ligatured vessel is dependent upon the activity of the cells of the intima. If an artery is temporarily compressed or bruised or its outer surface is cauterised the changes produced are witnessed in the intima. If from any cause a thrombus forms in a vessel it is the inner tunic of the vessel which reacts to its presence, and if the blood circulating through a vessel is irritating or the tension high it is the same coat that suffers. The only primary change in the middle coat is one of simple degeneration—calcification—and we know nothing at all of any primary change originating in the tunica adventitia. The tunica intima is, in fact, the essential part of an artery; it is present throughout the entire system and is equally important everywhere. The muscular coat is added as a vaso-motor mechanism and the outer coat is an added strength to the artery, but both of these are subsidiary—there are vessels without the one or the other—but without the tunica intima there can be no vessel at all. Disease not only occurs in the inner coat of an artery more frequently than in either of the others—e.g., atheroma—but there its effects are most serious. For when the inner coat is very gravely affected its function is interfered with and the lumen of the vessel is occluded, and this occlusion is brought about in one or both of two ways. In the first place, any hyperplasia of the endothelium or sub-endothelial tissue causes a bulging into the lumen of the vessel, the elastic lamina on the outer surface is a very resistant structure, and, as it were, shuts in the cells and soft tissues and prevents their bulging out or passing into the muscular and fibrous tunics. The direction of growth is towards the centre of the vessel. But disease of the inner coat, especially when the endothelium is involved, very quickly leads to thrombosis, which in small vessels at once obliterates the lumen and, except in rare cases, the clot soon becomes organised into vascular cellular tissue.

Of these two agents in the obliteration of arteries—new growth and thrombus—it must be borne in mind that while thrombosis may be and often is a very rapid process, the growth of the inner coat to such an extent as to fill the lumen of a vessel is always a slower process and slow in direct proportion to the size of the vessel. We must also bear in mind that a clot in an artery or a vein has a tendency to extend, and we often find it extend very rapidly; but the primary inflammatory growths of the intima appear to be much slower in their progress along an artery. And, lastly, another difference between these two occluding agents seems to be this—that a blood-clot may be absorbed and disappear and the vessel which it has closed opened out again, but a like opening-out of a vessel once closed with sub-endothelial growth, so far as we know, never occurs.

These considerations, in my opinion, make it very doubtful whether obliterative arteritis is a specific disease to be sharply differentiated; I would rather regard it as a pathological effect of many causes; and I would not therefore separate it from the syphilitic disease of small arteries described by Heubner and others. The chief features of obliterative arteritis are these:—1. The disease originates in the subendothelial layers of the tunica intima of the smaller arteries. In its early stages it is marked by a small-cell infiltration which later organises into a loose and vascular connective tissue. 2. This growth narrows the lumen of the vessel and may entirely obliterate it; more often, however, thrombosis occurs and the organisation of the clot completes the permanent occlusion of the artery. 3. The disease beginning in the smaller arteries tends to spread in a centripetal direction and may reach even the largest arteries. The thrombosis it excites also often extends rapidly and far

[1] Lecture I. was published in THE LANCET of March 1st, p. 576. Lecture III. will be delivered on March 17th.
[2] Centralblatt für die Medicinischen Wissenschaften, 1876.
[3] Virchow's Archiv, 1879.
[4] Archiv für Klinische Chirurgie, Langenbeck, Band vi.
[5] Virchow's Archiv, Band xxxviii.
[6] Transactions of the Clinical Society, vol. xvii.
[7] Ibid.
[8] Ibid., vol. xix.
[9] Ibid., vol. xxiv.
[10] Bulletin de l'Académie de Médecine, 1894, tome xxxi.
[11] Archives of Surgery, vol. vii.
[12] See Centralblatt für Chirurgie, 1898, Band xxv., p. 937.
[13] Transactions of the Clinical Society, vol. xxxi.
[14] Journal of Anatomy and Physiology, 1897-98, vol. xxxii., p. 153.
[15] Virchow's Archiv, 1900, Band clxi., p. 199.
[16] Tr. Montpellier Médical, 1900.

towards the heart, much faster and further than the changes in the vessel wall, and the clot may thus spread as far as the aorta. 4. The earliest effect of this diseased artery is pain, then follow other evidences of local ischæmia and these may pass on to gangrene. These effects vary with the extent of the vascular obstruction and the efficiency of nature's means of compensation. 5. The disease may be very chronic, slowly progressing for years, or it may run a much more rapid course. Having reached a certain point arrest may occur and the symptoms may gradually pass away as the unaffected vessels become more and more efficient substitutes for those that have been occluded. 6. The disease arrested for a time may afterwards recur in the vessels of the same limb or elsewhere, and it may attack more than one vascular area simultaneously. 7. The vascular changes are not always limited to the arteries and endophlebitis may precede or accompany the endarteritis and the venous obstruction then modifies the effects produced on the tissues.

But I think we shall best appreciate the characters of the affection if I describe cases that I have seen and I will take first of all one that I think is a fairly typical case; I will then narrate others to illustrate, as far as my experience permits me, the salient features which are met with, and I will conclude by drawing attention to some of the points not included in the summary just given.

CASE 1.—A man, a carpenter by trade, was admitted into Middlesex Hospital under my care on July 2nd, 1895. He was then 56 years of age, a stout man, looking rather older than his years. He said that he had enjoyed good health up to October, 1894, when, he knew not why, the left internal saphena vein became swollen, inflamed, and painful from the ankle to the groin. For this he rested in bed and the swelling gradually subsided. The following month (November) the left foot became red and "inflamed," and he was treated for some time for gout. The pain was great and in spite of treatment continued all through the winter, and in March, 1895, the foot was noticed to be shrivelling and turning black. The gangrene gradually extended until it involved all the toes. Throughout his illness the pain had been very great and he had been obliged to keep his bed. When admitted to hospital the toes of his left foot were black and shrivelled, blue-black gangrene extended on the foot as far as the mid-tarsal joint, and the skin of the rest of the foot up to the front of the ankle was dry and brownish. There was considerable œdema of the leg and the skin was very sensitive; it was colder than the opposite leg and the skin was mottled and rather livid in hue. The left femoral, popliteal, and tibial arteries were pulseless and could be felt as firm cords. The arteries elsewhere in the body could be plainly felt pulsating; they were neither rigid, tortuous, nor uneven: they did not show any signs of atheroma or degeneration. There was no arcus senilis; the temporal pulse was not visible. The pulse-rate was 136; it was rather uneven and compressible. The area of the cardiac dulness was diminished, the first sound was short, and the second sound was indistinct; there was no bruit. The man was pale, bald, with grey beard, with a good deal of soft subcutaneous fat; the abdomen was full and fat; the liver was not enlarged. The urine was acid, with a specific gravity of 1018, and it was free from sugar and albumin. The man was restless with a rather noisy delirium, but was evidently in great pain. The temperature varied between 100° and 101° F. There was no history or evidence of syphilis. On the lower part of the right leg was a pigmented scar of an ulcer. I amputated the limb at the knee-joint. There was no bleeding from the popliteal artery when the tourniquet was removed and the end of the vessel could be plainly seen securely plugged by soft solid vascular tissue. There was slight oozing of blood from vessels in the sheath of the artery, showing a very vascular condition of that sheath; only five ligatures were needed for the whole stump. Immediately after the operation the patient lost his delirium and his pain, he became quite quiet, and his general health rapidly improved. The stump healed well and the temperature fell to normal on July 9th, and on the 24th he went to a convalescent home at Swanley. (Owing to an accident the amputated member was not dissected.) For two years this man continued well and got about freely. But during the winter of 1897-98 he came to me at the hospital several times complaining of severe pain in the right foot and leg and a sense of coldness and numbness—these pains were much worse when the weather was very cold or if the part was not warmly covered up. I found the foot and leg as high as the knee cold and mottled in colour with very sluggish circulation, and I could not detect any pulsation in either the tibial or the popliteal artery. I advised him to rest the limb and to keep it very warm. It was evident that the disease had now affected the arteries of the right foot and leg. On his last visit in the early summer of 1898 he was rather better. But he was suddenly readmitted to the hospital on Oct. 21st, 1898, in a very grave condition. He was incoherent, unable to answer questions, restless, and complained of pain in his foot and leg. His tongue was thickly coated with a white fur and he seemed to be very thirsty. His friends stated that his foot had become cold and blue on the 19th and that after that he had become rapidly more ill. I found the right foot and lower third of the leg very cold, mottled blue and white, slightly swelled, and the circulation, although nowhere arrested, was yet very sluggish. There was no pulse in the tibial, popliteal, or femoral arteries; they were all, when felt, firm cords. The arteries of the arms, on the other hand, were soft and not tortuous. The pulse was rapid, regular, and compressible. The urine was pale, of specific gravity 1005, acid, free from sugar, with a slight cloud of albumin on boiling. The temperature ranged between 99° and 100° F. I kept the limb as warm as I could with thick cotton wrappings, outside which were placed hot bottles, and tried to relieve his pain with morphia. But he got worse. On the 24th I could not demonstrate any circulation in the foot; in the lower third of the leg it was very languid, but the upper half of the leg was warmer and the circulation was fairly active. The superficial veins were not thrombosed. His temperature was higher (101°), he was less conscious, and sometimes passed his urine in the bed. Remembering his rapid improvement after the former amputation I decided to remove the limb at the time and did it on the 24th. He slept well after the operation and woke up quieter and more rational. The next afternoon, however, he became more restless; his temperature rose; on the 26th it reached 103·8°, his pulse was counted at 156, and just before midnight on the 26th he died.

On dissecting the leg we found the popliteal artery blocked by a firm organising clot. The posterior tibial artery was quite small, occluded in its entire length by a soft colourless clot; the wall of the vessel was considerably thickened, especially at the posterior part of its circumference. The anterior tibial artery was small, with thickened walls, but had still a narrow lumen. The arteries were very firmly matted to their companion veins and were separated only with great difficulty. The post-mortem examination was made by Dr. A. F. Voelcker who recorded that the heart was dilated, flabby, with ante-mortem clots in both ventricles and in the right auricular appendix. The aorta in the thorax showed very trifling disease and there was no atheromatous ulceration. The carotid and subclavian arteries and the jugular, innominate, and superior caval veins were normal. The femoral and iliac vessels were blocked with clot, the lumen of the vessels was only a little diminished, and except for some calcareous patches the walls did not show any marked change. The clot extended up the abdominal aorta as high as the origin of the renal branches and here ended in a conical tip. The left kidney showed one infarct; the right had many.

This case is fairly typical of the affection called obliterative arteritis. I would call attention specially to the insidious onset, slow progress, the severe pain coming on as the first symptom and lasting throughout—pain that was worse in cold weather or when from any cause the affected part was exposed to cooling. Then the signs of local ischæmia with loss of pulse in the arteries and their conversion into solid cords, passing at length into gangrene of the most distant sections of the member,—all this, associated with a healthy condition of the arteries generally, as shown by their softness, smoothness, and absence of convolution and locomotor pulse at the elbow and temple, for instance. The symptoms may vary in intensity a little from time to time, but there is never the marked periodicity or intermission of symptoms that characterise Raynaud's disease. The obstruction to the circulation, whatever it is, is organic and permanent from the first, and capable of relief only by the agency of anastomosing and alternative arteries. The essence of Raynaud's disease is vascular spasm, variable and temporary, and only causing permanent changes—gangrene—when prolonged spasm is followed by thrombosis. Hæmoglobinuria which often occurs in Raynaud's disease is never present in obliterative arteritis. The case which I have

quoted is instructive, too, in the recurrence of the malady in another limb, and this event is so important that I will briefly quote another case in which I have seen it.

CASE 2.—A man, aged 60 years, a carpenter, was admitted into Middlesex Hospital under my care on May 12th, 1897. There was no family history of importance. His general health had always been good; he had been a temperate man and had not had syphilis, gout, or tubercle. He told us that he was subject to chilblains, especially when young, and that he had injured his right leg and foot on two occasions, once, 28 years before we saw him, when the lower part of the leg was "crushed" and it took six months to heal up. 18 years later the right great toe was contused; the nail separated and had never grown again. He had been laid up for three and a half years when I first saw him. The trouble began, he said, with a sore formed on the left heel which became black (gangrenous); later the little toe, then the second toe, and afterwards the third toe became gangrenous; part of the second toe had separated spontaneously. Four months before admission he noticed a black spot on the great toe. Two months later the skin over the dorsum of the foot became blue, and this spread to the leg. All this time he had suffered from dull aching pain with sharp twinges in a part before it became black. He was a dark-haired, thin, emaciated man. He was depressed, haggard-looking, and complained of great pain and inability to sleep. The left foot and ankle were blue and cold and on the outer side this extended as high as the middle of the leg. The three inner toes were mummified; there was a large patch of dry gangrene on the dorsum of the foot; the sole of the foot was purple and cold but not actually gangrenous. No pulse was felt in either tibial artery; there was slight pulsation in the popliteal artery. There was some matting of tissues over the dorsum of the right foot and the lower fourth of the leg; the skin was thin and atrophied; there was no loss of sensation or of pulsation in the arteries. The heart was healthy; the temporal artery was not visible or tortuous; there was no locomotion or tortuosity of the brachial artery at the elbow. The urine had a specific gravity of 1017, it was free from sugar, and it contained excess of phosphates and a faint trace of albumin. The temperature ranged from 100° to 101° F. I amputated the left leg at the knee-joint; only three arteries were tied—the popliteal, a large branch coming off from it and the internal sural artery; the popliteal artery was thickened with a narrow lumen and would not twist. The arteries in the amputated leg were found to be all greatly thickened; the dorsal artery of the foot and the external plantar artery were occluded, the internal plantar was still patent. The veins in the sole were thrombosed, those in the leg were pervious. The man made a slow convalescence, part of the outer flap sloughed, and the bone had to be shortened. But he eventually left the hospital for the convalescent home in August, 1897, free from pain, sleeping well, cheerful, and quite a different man from when he came in.

He remained well till March, 1899, when he found that the inner side of his great toe was tender and he began to suffer pain in the foot. At the end of September a black patch appeared at the root of the great toe and the gangrene spread to the other toes and the dorsum of the foot. The pain meantime increased to great severity, described as aching in character, with sharp twinges or paroxysms. He was again admitted into the hospital on Nov. 29th, 1899, having been ill nine months. The left stump was sound and well; it was very difficult to detect any pulsation in the femoral artery on that side. The right foot was swollen, cold, mottled in colour, and the toes were gangrenous. He complained of intense pain in the foot and was evidently in great suffering. There was no pulse to be felt in any artery below the femoral. The radial artery was not hardened or tortuous and there was no evidence of disease in other arteries. The urine was of specific gravity 1020, free from sugar, and contained a trace of albumin. On Dec. 2nd I amputated through the condyles of the femur by Lister's method. The popliteal and two or three small arteries were tied; the wall of the popliteal artery was much thickened. Convalescence was again slow, but he went to Clacton with the stump healed on Jan. 11th and returned on Feb. 6th, having gained 13½ pounds in the four weeks. I have seen this man occasionally since. The left stump has given him no trouble, but on his last visit to me the right thigh was very painful; it was cold, rather blotchy and blue, and I could not feel any pulse in the femoral artery. I advised him to keep it very warm.

The liability for the disease to attack both lower limbs was illustrated by a case that I reported to the Clinical Society and which will be found recorded in vol. xxiv. of that society's Transactions.

CASE 3.—The patient was a man, aged 43 years, a draper's traveller. While an inmate of an asylum for acute mania supervening upon an attack of influenza he was seized with severe pain in his feet and legs. They were noticed to become cold and blue and in a few days gangrenous. When admitted to the Middlesex Hospital there was gangrene on each side as high as the bases of the malleoli with mummification of the toes and œdema of the legs. Pulsation could not be felt in the popliteal or tibial arteries, the heart sounds were normal, the pulse was 88, and the brachial arteries were not obviously diseased. The urine was acid, free from albumin and sugar. I amputated the legs at the knee-joints and the patient made a good recovery. I have heard nothing of him since. The popliteal arteries, where divided, were filled with organising clot, and the wall of the vein was thickened. The arteries and some of the veins in the leg showed marked thickening of the interior coat with, in places, occlusion of the lumen by coagulum; there was no calcareous degeneration.

These three cases will suffice to illustrate the tendency of the disease to attack the vessels of more than one limb, either concurrently or successively. Mr. Spencer has recorded a very interesting case in which three limbs, the right arm and both legs, were simultaneously affected.

Let me now relate some cases from which I think we may learn something of the etiology of this affection. The first of them is that of a woman who developed symptoms of erythromelalgia after an attack of influenza and then shortly afterwards showed signs of local ischæmia in the same limb caused by arterial obliteration

CASE 4.—The patient was a woman, aged 65 years, seen in consultation with Dr. Ker and Dr. Aldren Turner. I am indebted to Dr. Turner for the notes of the earlier history of this patient. This patient had enjoyed good health until the early part of 1898, when she had an attack of influenza. She made a good recovery and remained well through the summer. In October, 1898, she experienced pain in her right foot without any loss of power. This continued more or less all through that winter and the following spring, and in August, 1899, she consulted Dr. Aldren Turner. He found marked tenderness over most of the nerves of the upper and lower limbs; she complained of pain in the right foot, and over the toes there was marked superficial pain, with redness and increased heat. She could scarcely bear to place the foot on the ground so great was the pain produced. There was no paralysis. She was thin and all the tissues were flabby. Dr. Turner ordered galvanism. When next seen in September there was marked improvement in the foot—apparently as the result of the galvanism. General massage and the recumbent position were then ordered, and bromide of potassium, salicylate of soda, and phenacetin were prescribed. On Oct. 6th Dr. Turner received a letter from Dr. Ker, stating that there had not been any improvement lately and the treatment seemed to have lost its beneficial effect. But very soon after that the patient appeared to get quite well, she went about freely, walking was easy to her, and she went on a visit into the country. On Jan. 14th, 1900, Dr. Turner visited her in the country and learnt that she had continued well until the onset of very cold frosty weather about 14 days before Christmas, when she had great pain and a burning sensation in the right foot, followed shortly after by signs of local asphyxia in the toes—chiefly the second toe. At his visit he found all the toes of the right foot blue, there was a large blue patch over the right heel, and another over the dorsum of the foot. The foot felt moderately cold to his hand, but subjectively was said to be very cold. The toes were very tender; there was no anæsthesia. The pain in the foot was intense at times, chiefly at night. There was no pulse in the posterior tibial artery; the radial pulse was of good volume and there was no sign of marked atheroma; and no affection of the nose or ears was present. The patient complained of slight pains in the left toes, where there was some doubtful redness, and also of slight numbness in the fingers. The pain continued very severe, the condition of the foot became worse, and I was asked to see the patient on Jan. 24th. There was then gangrene of the toes and dorsum of the foot and the heel. I could not detect pulsation in any of the arteries of the right lower limb below the middle of the thigh; the arteries could be felt as firm cords. Pulsation could be

plainly felt in all the arteries of the left thigh and leg. The urine contained lithates, but was free from sugar and albumin. The radial, brachial, and temporal arteries did not show atheromatous change. The patient was thin, much worn by her suffering, and her appetite was failing. She got very little sleep. The heart and lungs and the liver were healthy. The right kidney was moveable. There was no evidence of syphilis or of alcoholism. We advised amputation and next day I removed the limb just above the knee-joint. The popliteal artery was a solid cord and did not require a ligature. She made a good recovery from the operation, the stump healed well, and the pain was at once greatly relieved and the patient's general condition correspondingly improved. I was, however, asked to see this patient in March—two months after the amputation—and I found that she was then suffering from severe pain in the thigh. This was swollen quite considerably and the skin was marked with blotches of blue and red; the surface was cold. The pain in the thigh was described as very severe. I could not feel any pulse in the femoral or external iliac arteries. The arteries on the left side pulsated normally. I advised that the limb should be kept raised, very warmly swathed, and gently massaged twice a day. At the same time I gave a serious prognosis, as I feared that the disease might extend to some visceral artery. I did not see the patient again, but Dr. Ker has informed me that the pain, swelling, and discolouration of the thigh disappeared, and the patient seemed to get "quite well" so far as the arterial disease was concerned. She died in 1901 from some chest affection—not from anything connected with the old trouble. She was not then under Dr. Ker's care and I have not been able to obtain more precise information. The arteries in the amputated limb showed the usual changes. The popliteal, tibial, and peroneal vessels, as far as they could be traced, were converted into solid cords with greatly thickened walls. The tunica intima was much thickened and the narrowed lumen was occluded with organising thrombus.

This case is specially interesting because of the history of the onset of the affection—unique in my experience and reading. When Dr. Aldren Turner first saw this patient she presented the symptoms of erythromelalgia—that is to say, neuralgic pains with signs of dilatation of the arteries and increased vascularity of the tissues. There was local heat and the pain was greatly increased by putting the foot to the ground and by warmth. This was the state of things in the summer of 1899, and these symptoms passed off and the patient appeared to be quite well in the autumn. But with the onset of wintry weather the picture was strangely altered; the local heat and flushing were changed into coldness and sluggish circulation which gradually culminated in gangrene. Erythromelalgia is a rare affection and but little is known about it. In his excellent article in Clifford Allbutt's "System of Medicine" Sir Thomas Barlow sums up the evidence for and against the various views of its pathology that have been advanced, and shows that the balance of evidence is in favour of the view of its consisting in a dilatation of the arteries caused by paresis or inhibition of the vaso-motor nerves. Whether this be a primary or a sequential phenomenon the dilated arteries are the most important feature of the disease, and Sir Thomas Barlow very pertinently remarks that the arterial dilatation might excite changes in the intima and lead to thickening of the arteries and narrowing of their tissues; he refers to Thoma's experiments to show that increased arterial tension, if kept up, leads to proliferation of the intima. The case I have related shows us this very sequence. It is also of interest as an illustration of the tendency of the disease to spread upwards even after amputation well above the gangrenous area and of the smaller gravity of the disease in the thigh than in the foot and the leg.

The next case illustrates another cause of the same condition.

CASE 5.—The patient was a woman, aged 45 years, seen in consultation with Dr. S. Blake Jolly. For many years she had suffered from very severe menorrhagia which had kept her in a state of extreme anæmia. For years she had taken alcohol in excess, chiefly in the form of spirit. She was constantly needing medical attention, either for the hæmorrhage, or the anæmia, or the effects of special alcoholic excess. Ten days before I saw her Dr. Jolly was called in and found her in great pain in her left foot with paroxysms of very severe agony; the foot was colder than the other, pale, mottled in colour, with sluggish circulation. The severe pain continued in spite of the application of local heat, and injections of morphia had to be given. I saw the patient on March 6th, 1900; she was very stout and flabby with a very fat abdomen, her skin was white and her mucous membranes were very pale, and she looked very unhealthy. The toes of the left foot were gangrenous, blue-red in colour, not altered in size, and the gangrene extended for about an inch on to the dorsum of the foot and a little further on to the sole. The rest of the foot was cold, mottled blue and white in colour, but the skin retained its sensitiveness as far down as the edge of the gangrene. I could not feel a pulse in the popliteal artery or either of the tibial arteries; there was pulsation in the femoral artery and in the tibial arteries of the right side. There was no evidence of general atheroma of the arteries. The brachial artery was not tortuous or hard. There was no valvular disease of the heart. The urine was free from sugar, but it contained a very slight trace of albumin. This patient was in very severe pain in the foot and leg. I recommended amputation and next day removed the limb above the knee-joint. This patient made an excellent recovery. I heard of her quite recently from Dr. Jolly and he told me that her stump had remained well, so had her left foot and leg, and that she had continued the abstinence from alcohol which we enforced during the healing of the wound and with very great benefit to herself. I think the *causa causans* in this case was the alcoholism—the irritating effect of the alcohol circulating in her blood. The case illustrates also what we so often see—the great benefit which alcoholic patients derive from breaking off the habit and excluding alcohol altogether from their dietary even when organic change such as obliterative arteritis has taken place. If this patient will continue her abstinence from alcohol I am very hopeful that she will have no return of the disease. She has been free from it for two years already.

In the following case the condition probably resulted from syphilis. This patient was in the Middlesex Hospital under the care of Dr. W. Pasteur, and I am indebted to him for an opportunity of examining the man and for permission to use the notes of the case.

CASE 6.—A man, aged 48 years, a gardener, was admitted into Middlesex Hospital on Jan. 3rd, 1898. He had had good health up to the time of this illness and we failed to elicit from him any history of syphilis or of injury. He said that for three and a half years he had suffered from redness and a burning and stinging pain in the left great toe at night, so severe as to prevent sleep. This pain sometimes came on during the day. Similar symptoms came on in the right foot about six weeks after he noticed them in the left. The feet were at times quite white, at others blue, and he noticed then that when he pressed the colour out with his finger it returned very slowly. The great toes suffered most, the other toes to a less extent. He had not noticed any numbness or loss of sensation. Six months before he came under observation he observed mottled redness of the soles of the feet, and a month before admission he saw a blister on the tip of the right great toe; this gradually extended under the nail and beneath it a black eschar was seen. This change was accompanied by most excruciating pain. He was a man of spare build and nervous habit; his pulse was 72, weak and compressible; the heart sounds were healthy. The urine was acid, 1020, and there was no albumin or sugar. The temperature ranged between 97·6° and 99° F. The skin of each foot, especially on the sole, was much mottled and generally reddened; on the end of the right great toe was a patch of black gangrenous skin. He suffered great pain, and even hypodermic injections of morphia failed to give him more than two hours' sleep at a time. There was no pulse in either posterior tibial artery or in the left popliteal and femoral; that in the right femoral artery was quite distinct. The gangrenous patch on the toe extended a little, the slough slowly separated, and the ulcerated surface still more slowly healed. He was sent to Clacton on Feb. 27th in good general health, nearly free from pain, but still showing blotchy discolouration and sluggish circulation in both feet. The man returned to hospital on April 13th, 1898, on account of increasing pain in the left foot. The right femoral pulse was only just perceptible, the left could not be felt, and the artery was represented by a hard cord in Scarpa's triangle. No arterial pulse was felt in either limb below the femoral artery. The toes of the left foot were of dark blue-black colour and "somewhat swollen." There was very distinct "marbling" of the foot with purple and red and paler areas. The lividity of the toes increased, blisters formed and burst, and exposed foul, discharging surfaces, and slowly in

a month or so the toes were quite gangrenous. All this time the patient suffered very severe pain. The urine was sometimes quite normal; more often it contained just a trace of albumin. Nothing was detected abnormal in the arteries of the upper limbs. On May 27th the urine was noticed to be of a dark orange colour, of specific gravity 1020, no albumin or sugar. This colour persisted up to the man's death. Albumin was sometimes present in small quantity. It did not give the reaction for blood-pigment, bile, or indican. On the 31st the gangrene of the foot was found to be extending towards the heel. He was frequently sick and was unable to retain any food. On June 3rd the vomiting, with much retching, returned, and persisted until the man died from exhaustion on the 8th. On the 7th a tumour was discovered occupying the greater part of the lower half of the abdomen. Its outline was indistinct and it was dull on percussion. Above it percussion revealed a distended stomach. This "tumour" was not present three days before; it was uninfluenced by emptying the bladder by a catheter.

At the post-mortem examination a gumma was found in the liver as well as definite syphilitic infiltration; the vessels of the liver were not thickened. A gumma was also found in the spleen. The lower 21 inches of the ileum were firmly adherent to the anterior abdominal wall and to each other. This portion of the intestine was purple-black in colour, without any peritoneal lustre, and its coats were greatly thickened by an infiltration of coagulated blood, so that its lumen was considerably diminished. The intestine above this was greatly distended. The colon was filled with feculent material of a dark coffee-ground colour. The mesentery corresponding to the affected part of the bowel was much thickened from extensive hæmorrhage into it. The superior mesenteric vein was distended with a thrombus quite up to the commencement of the portal vein. The superior mesenteric artery was markedly thickened and its lumen was almost obliterated in parts. A thrombus extended from the upper end of the left external iliac artery to the popliteal artery, and on the right side a clot extended from the upper end of the external iliac artery down into the tibial arteries two inches below the bifurcation of the popliteal. The heart was healthy and the abdominal aorta was healthy except for small areas of atheroma around the mouths of branches. A microscopical examination of the vessels showed distinct thickening of the intima of the superior mesenteric artery with a loose connective tissue; in the arteria dorsalis pedis there were similar changes except that the endothelium, though irregularly thickened, had a dense structure as compared with the loose one seen in the mesenteric artery.

In this case the cause of the disease was probably syphilis. There were old endarteritis of the vessels in the feet, more recent extensive thrombosis of the arteries above, and in addition arteritis and (possibly) phlebitis of the superior mesenteric vessels with thrombosis leading to great hæmorrhage into the walls of the intestine with corresponding loss of function.

I have seen two cases of this disease in the upper limb, one of which is very fully recorded in Vol. xvii. of the Transactions of the Clinical Society.

CASE 7.—This case occurred in a young brickmaker. The painful illness extended over about eight months and the main arteries of the limb were gradually obliterated up as high as the upper end of the brachial artery. There was gangrene of the tips of two digits. While the disease was active the pain was most intense.

CASE 8.—This case occurred in the right arm of a woman between 30 and 40 years of age whom I saw on one occasion only as she was passing through London. After an attack of influenza she began to suffer with severe pain in the right hand and forearm, made worse by using it and by exposure. The pain was attributed to neuritis; remedies had no effect upon it. When I saw her she was much better and was returning home after a visit to Bournemouth. I found the radial, ulnar, and brachial arteries as high as the middle of the arm converted into firm pulseless cords; the forearm was a little wasted, tender, bluish-red in colour, not so warm as its fellow, and painful if allowed to get cold. The other arteries of the body and of the heart were healthy; so was the urine.

CASE 9.—A man, aged 48 years, was seen by me once only in 1896. He had lived a healthy active life and there was no history of rheumatism, gout, or syphilis. In the autumn of 1890 when out shooting he suddenly felt his right leg become cold, weak, and painful; this was not due to any injury, strain, or exposure to cold. He lay up for many weeks at the suggestion of his medical man who told him that there was no pulse in his posterior tibial artery. He remained well until September, 1891, and then, again when out shooting, he was seized with the same kind of pain in his left foot. This attack was more serious than the former one; the pain was very severe, and the second toe became almost gangrenous. Among others he was seen by M. Charcot who prescribed prolonged rest in the recumbent position. He rested the leg for six months. After that he had two attacks of phlebitis—one in each thigh. When I saw him in 1896 he could walk with comfort for 100 yards, but then a painful sense of weakness in the legs came over him. When standing he was always desirous of sitting or lying down. Each leg was slightly œdematous and the circulation in the feet and lower part of the leg was distinctly sluggish. On the right side there was no pulse in either of the tibial arteries; on the left side there was no pulse in the anterior tibial and only a slight one in the posterior tibial vessel. Both femoral arteries were normal and so were the arteries of the head and neck. There was no disease of the heart or any sign of aneurysm; the urine was 1018, acid, and free from albumin and sugar. The liver and spleen seemed to be healthy. I recommended this patient to use his legs a little more and to have them carefully massaged. I have not seen him since. The history of this case is certainly peculiar. The sudden onset of the symptoms is suggestive of embolism, but there was no obvious source of such. The recurrence of the attack under exactly similar circumstances is striking, and yet I cannot see what clue it gives us. In other respects the case resembles endarteritis, and in each leg the obliterated vessel could be clearly demonstrated.

These cases illustrate several points in the history of this affection in addition to those which I mentioned in my preliminary summary. I will refer to a few of them. The *extreme chronicity* of the process is well exemplified by Cases 2 and 6, where it had been going on for three and a half years before I saw the patients. Cases 3, 4, and 5 are, on the other hand, examples of a more acute form of the malady, and intermediate grades are furnished by Cases 1, 7, and 8. The *pain* which is experienced by these patients is generally very severe. I have never seen stronger evidence of extreme pain in anyone than I witnessed in the young man whom I saw in 1884 (Case 7). He often writhed on the floor in agony that even large doses of morphia had little effect in controlling. Pain is the earliest symptom noticed; it has been described as "rheumatic," also as pain in the bones; it is referred to the deep structures of the part and is aching in character, and the intensity of this ache may culminate in an agony. It is often worse at night, is generally made worse by use of the part, and is always aggravated by exposure. The *ischæmia* varies in degree. As a rule there is not much alteration in colour until gangrene is threatened; what there is is blotchy in distribution and dull red. It is specially noteworthy that it is not accompanied with anæsthesia. There may be slight wasting of the part or swelling from œdema—this generally due to venous obstruction. The *gangrene* may be a slow mummification or a more rapid sphacelation; in some cases the parts preserve their consistence and proportions quite remarkably, being neither "dry" nor "moist." This variation, no doubt, depends upon the degree to which venous obstruction is associated with the arterial obstruction, if, indeed, it is present at all. The case which Dr. Pasteur has allowed me to use (Case 6) showed the extreme degree of venous thrombosis in the mesentery with extensive hæmorrhage into the bowels and between the layers of the mesentery. Another feature of the gangrene often noticed is its patchy distribution—in some cases, no doubt, it is total up to a given level (Case 3), but in others (e.g., Cases 1 and 2) separate areas of the foot necrose. This is easily explained by the irregular extension along the arteries of the obstructive disease. *Fever* is usually present when the disease is active (see Cases 1, 2, and 7), and other constitutional effects may be witnessed, such as wasting, loss of appetite, and delirium. The state of the *other arteries* of the body is naturally laid great stress upon in diagnosis. Widespread atheroma or calcification affords an obvious explanation of interference with the circulation in distal parts; but, of course, this disease may occur in patients who manifest some degree of atheroma, and an instance of this is afforded in Case 1.

Sex.—The disease is certainly more common in men than in women—in my cases in the proportion of seven to two.

Age.—My youngest patient was 19 years of age and my oldest was 60 years of age. It seems to be a disease of adult life, not occurring in infancy or in old age. Dr. Bryant and Dr. W. Hale White have recorded a remarkable case in the fifty-fifth volume of the Guy's Hospital Reports of an infant, six months old, who had gangrene of the toes and distal half of the foot. The child was greatly emaciated and died. There was widespread arterial disease, the inner coat was greatly thickened and there was calcification of the deep layers of the intima and of the media, so that the artery cracked when bent and felt gritty. I hesitate to include this case in the same category as those which we are considering. It seems to stand out as almost unique—possibly it is of the same nature as one recorded by Durante.[17]

Etiology.—Various views of the causes of this form of endarteritis have been advanced. Friedländer attributed it to the influence of injury and external cold. Wwedensky believes that there is a neuritis associated with, and possibly antecedent to, the arteritis. Sternberg attributed it to the effect of various injuries upon a weak and depressed vascular system. Hollis suggests that by the repeated impact of foreign particles against the sides of a small artery a state of "irritation" or "molecular unrest" is established within certain endothelial cells. This unrest manifests itself physiologically by rousing the little central mass of nuclear protoplasm of the cell from a dormant condition to activity. We really know so little of the ultimate causes and processes of disease that it is difficult to accept or to reject such theories as these. Of all known causes syphilis is perhaps the most certain; influenza, alcoholism, erythromelalgia, cold, contusions, and previous thrombosis or phlebitis may be regarded as more or less important factors in originating the disease. Diabetes sometimes causes gangrene by exciting this disease.

Treatment.—There is little to say on the subject of treatment. In the earlier and less advanced stages of the malady prolonged rest of the affected part is certainly called for. Local warmth should be carefully supplied. Anodynes often in large quantities may be necessary for the relief of pain. Massage carefully carried out has also an important influence in furthering the opening out of collateral vessels, in promoting absorption through the lymphatics, and in freeing the muscles and other tissues of their waste products. In the acute stage the parts are too tender to admit of it; in all early cases it must be most cautiously employed; where the disease seems to be arrested and we have to deal with its effects only it may be used a little more vigorously. Small mummified areas may be left to separate naturally, especially in the hand. For more extensive gangrene, which is always, I believe, of the "mixed" form, amputation is necessary; the relief to pain that the operation affords always reconciles the patient to the mutilation. The operation should be done high above the gangrenous spot and at a place and by a method that throws least strain upon the vessels of the part. Thus amputation through the lower part of the thigh is to be preferred to disarticulation at the knee and musculo-cutaneous flaps are to be chosen in preference to skin flaps.

[17] Brit. Med. Jour., Epitome, 1899, vol. i., p. 542.

WOMEN AS SURGICAL OPERATORS.—At the annual meeting in connexion with the New Hospital for Women, Euston-road, Sir Thomas Smith, Bart., K.C.V.O., F.R.C.S. Eng., referred to the surgical work done at the New Hospital for Women. At that hospital, he said, women surgeons had gained a reputation for good surgery and had dissipated all prejudice which had existed against them. There had been attended at that hospital upwards of 1900 cases of maternity and up to within a short time of that meeting he could have said that among those cases there had been no deaths. The case he referred to, however, was not a maternity case, and so they had 1900 cases of maternity attended from that hospital without a death. 577 major operations had been performed with a mortality of under 6 per cent. He had been allowed personally to attend the operations in the operating theatre of the hospital, and he had very great pleasure in stating that he had nothing but admiration to express for the great dexterity and celerity with which the operations had been performed.

ABSTRACT OF

The Hunterian Lectures

ON

THE ANATOMY, PHYSIOLOGY, AND PATHOLOGY OF THE IMPERFECTLY DESCENDED TESTIS.

Delivered before the Royal College of Surgeons of England on Feb. 24th, 26th, and 28th, 1902,

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LECTURE III.[1]

Delivered on Feb. 28th.

PATHOLOGY—(*continued*).

Cysts of the imperfectly descended testis.—There are at least four varieties of cysts that may be developed in connexion with the testis that has failed to reach the scrotum. These are: (1) cysts formed upon the epididymis; (2) cysts found in the testis proper; (3) cysts due to fœtal remains; and (4) dermoid cysts, teratomata.

1. Cysts in connexion with the epididymis.—Like the cysts derived from the epididymis of the fully descended organ, so those found associated with the arrested gland are of two varieties, the small and the large. In the former the cysts never tend to enlarge to any but a comparatively small size, certainly not greater than that of an ordinary cob-nut. They are not therefore of much clinical importance. In the latter there is a tendency for the cysts to grow and they may assume such proportions as to become of very definite clinical significance. Small cysts in the epididymis of the fully descended organ are uncommon before the age of 40 and almost unknown previous to puberty. In the imperfectly migrated gland, on the other hand, they may appear earlier and more frequently than this. They may be sessile or pedunculated. When of the latter form they occasionally give rise to the production of loose bodies in the tunica vaginalis of the testis. Not infrequently they are multiple and sometimes they are very numerous. When pedunculated they cause small balloon-shaped swellings, very firm to the touch, almost giving the impression that they are of a solid nature. When sessile they raise the serous membrane so as to produce small oval or hemispherical tumours, also with the feeling of extreme hardness. If punctured a clear fluid, as a rule, escapes, which but rarely contains spermatozoa. It is possible that rupture of one or more of these small cysts may lead to the production of a vaginal hydrocele on account of some irritation set up by the extravasated fluid. These small cysts owe their origin to one of two sources. Either they are involution cysts due to the distension of previously existing cavities or they are connected with some fœtal remains, and are therefore cysts of congenital origin. If they are derived from the blockage and dilatation of the ducts or tubes of the epididymis they must be formed in the depths of this structure and gradually reach the surface, there to elevate the serous covering of the tube and in some cases to become pedunculated, possibly as the outcome of the almost constant pressure and movement to which they are likely to be subjected. Further, should this view of their origin be correct it would be thought that there ought to be a definite communication between the ducts of the epididymis and the cavity of the cysts themselves. It is doubtful whether such has ever been shown to exist, for by careful injection of the ducts with mercury none has ever penetrated into the interior of the cysts, and it is but rare to discover any traces of spermatozoa in the fluid even of those cysts which are found associated with a normally placed and developed testis. But in spite of these facts it does not necessarily follow that a communication

[1] Lectures I. and II. were published in THE LANCET of March 1st, 1902, p. 599.

may not have existed at an earlier period in the formation of the cyst than the one that was taken for the injection experiment and that the aperture may have become obliterated. Spermatozoa, moreover, may in time become completely disintegrated in the fluid in which they lie. Another argument in favour of this origin of these small cysts is the fact that the epithelium lining their wall bears a close resemblance to the epithelium of that which lines the ducts of the epididymis. The senile changes which occur in the epididymis when the testis is fully descended and the similar changes which take place in the testicular tissue of the organ that has failed to reach the scrotum consequent upon repeated attacks of inflammation both go to prove that there is an increase in the interstitial connective tissue. This new fibrous tissue, by a process of contraction to which it is ever prone, may bring about the obliteration of portions of certain ducts with a dilatation of that part which remains patent.

With regard to the theory that these small cysts of the epididymis owe their origin to the dilatation of fœtal remains, such as traces of the Müllerian duct, in favour of it may be advanced the fact that the enlargement usually occurs close to the spot where such remains are likely to be left, and against it is the knowledge that they seldom, if ever, are found in quite early life, a period of existence in which it might be thought that they would have been common.

The large cysts of the epididymis of the retained testis have their origin altogether within the substance of the epididymis in the majority of instances and are probably closely connected with the seminal tubules or the ducts of the epididymis. They are usually single, have a tendency to increase in size so that at times they assume considerable proportions, they often contain spermatozoa when the gland to which they belong is functionally active, and they can be readily palpated from without. They are generally found during the period of sexual activity and are therefore more common at an earlier age than the small cysts of the epididymis which have been just dealt with. The fluid that they contain is, as a rule, limpid and colourless or slightly milky. Occasionally the contents may be straw-coloured, more like the fluid found within an ordinary vaginal hydrocele.

There are, again, two theories as to the causation of these large cysts of the epididymis. They may in the first place be derived from the dilatation of one of the seminal tubules, one of the vasa efferentia, one of the ducts of the epididymis itself, or even in the sac that may result from the inflammation produced by the rupture, traumatic or spontaneous, of a seminal tubule. There is no doubt about the fact that spermatozoa in the active gland are generally present in the fluid of the encysted hydrocele, and that this proves a direct communication probably between the sperm-producing testis and the connected cyst. Further, the origin of some of these large cysts sometimes from fœtal remains is certain, and in these instances the sac will not contain any spermatozoa. Large cysts of the epididymis are not common in association with the imperfectly descended testis.

2. Cysts in connexion with the testis proper.—That the tissue forming the testis proper can originate cysts is a fact that is well recognised. They have been for the most part designated simple cysts or cystic fibroma of the testis. They are found in connexion with the imperfectly descended testis as well as in that organ which has reached the scrotum. They are, perhaps, more usually seen in the lower animals than in the human subject. Sometimes the cyst is derived from the tissue forming the corpus Highmori and its walls are then lined with ciliated epithelium.

3. Cysts in connexion with fœtal remains.—Attention has been already drawn to the fact that cysts in connexion with the imperfectly descended testis are derived from the dilatation of certain fœtal remains, and perhaps more frequently so in the arrested testis than in the one that has fully descended. They are extremely interesting, and may be classified as follows: those derived (*a*) from the hydatid of Morgagni; (*b*) from the Wolffian tubules; (*c*) from the vasa aberrantia; and (*d*) from the paradidymis. These cysts vary much in their characters. One which was found in the abdomen of a sheep, considered before death to be of the female sex, occupied the pelvis. It was four and a half inches in diameter. The vas deferens of the same side was thin and membranous and impervious save at its termination. It was lost on the wall of the cyst, which was filled with a greenish-grey putty-like substance and composed chiefly of a fatty material. Part of the cyst wall was covered with outspread bands of striped muscle. The cyst was composed of an inner layer of embryonic tissue of round cells, a middle layer of spindle cells, and an outer layer of fibrous tissue; these three layers probably represented the different stages in the development of the tissue. The cyst was either an undifferentiated genital gland, or it had been developed in connexion with the remains of the Wolffian body. Another cyst that I have examined was formed from the left testis which was removed from the abdomen of a horse, aged two years. The right testis was normal and had been removed from the scrotum three months earlier. The left testis was converted into a cyst of about the size of a walnut, the cavity of which contained a fatty, sebaceous-like material and in the centre of it a worm, probably a strongylus armatus, which had reached the gland almost certainly by passing down the spermatic artery. I have further lately seen an almost similar specimen, in which again a strongylus was found.

4. So-called dermoid cysts of the testis that have reached the scrotum have been undeniably observed, although it is no doubt true that some of the specimens that have been recorded are more likely to have been dermoids derived from the scrotal tissues rather than from the testicular body. I have not been able to trace a record of a true dermoid cyst of an imperfectly descended testis in the human subject, but there are several recorded in animals, and particularly in the horse. In these latter animals they have been shown to present similar characters to the common dermoids found in the human ovary, and probably their origin is somewhat the same. They may be in reality an attempt on the part of nature to produce a descendant from germinal epithelium which has remained from the primary genital mass but undifferentiated, and this abortive development, being without the help of the union of cells of the two sexes, results in the formation of the heterogeneous mass of sebaceous matter, teeth, ossifying cartilage, bone, hairs, &c. It is conceivable that the testis, and especially the imperfectly descended one, may contain the same or similar cells to those which the ovary does and from which this curious growth takes its origin. Finally, it must always be borne in mind that cysts may develop in connexion with malignant disease of an imperfectly descended testis, though such seem to be rarer than in the case of the gland that has passed into the scrotum.

Malignant new growths of the imperfectly descended testis.—Both sarcoma and carcinoma may attack an imperfectly descended testis, but the mesoblastic neoplasm seems to be of rather more frequent occurrence than the epiblastic. Sarcoma of a testis, whether of the fully descended or the partially migrated organ, is a comparatively rare disease. Considering that every male, except an infinitesimal minority, has at birth two testes, wherever they may be situated, it follows that the number of testes that might become the seat of a new growth of a malignant character is enormous, yet the instances of such lesions admitted into large hospitals are decidedly small. From the published statistics of one hospital at which over 4000 males are annually admitted there were only 38 cases of sarcoma of the testis, whether fully or imperfectly descended, seen in 15 years, giving an average of two and a half cases a year. It is a matter of extreme difficulty to determine satisfactorily whether a testis that has not reached the scrotum or has passed into an abnormal position is proportionally more liable to become attacked with sarcoma than one which is situated in its usual place. In the 38 cases which have just been alluded to only one was in a testis which was imperfectly descended, the gland lying in the abdomen and belonging to the left side. In a close examination of 48,000 males with hernia 854 had imperfect descent of one or both testes, or one in every 56, and none of these presented any form of malignant disease of the testis, though many had had attacks of inflammation of the testis, and in some instances these had been often repeated. The forms of sarcoma that affect the testis when it is retained are similar to those that occur in the normally placed gland, although there are not, so far as I have been able to determine, instances of every variety. The varieties as a rule met with are: the round-celled, whether chiefly of large or small cells, the spindle-celled, the mixed-celled, and the myxo-sarcoma. Chondro-sarcoma, lympho-sarcoma, and melano-sarcoma have not apparently been observed in connexion with a partially descended testis. Round-celled sarcoma is undoubtedly the most usual form to occur, and after this the

mixed-celled variety. These two sarcomata are of rapid growth, commencing generally in the connective tissue of the body of the gland, being but rarely primary in the epididymis. At first the new growth is confined within the tunica albuginea of the testis and is often surrounded with fluid in the tunica vaginalis, which fluid is not infrequently blood-stained. As the growth advances it transgresses the confines of the tunica albuginea and involves the surrounding structures. Usually, however, lymphatic glandular infection or secondary deposit in viscera has taken place before considerable local extension has occurred. The sarcomatous elements often in the imperfectly descended organ appear first in the connective tissue forming the walls of the poorly developed seminal tubules, or in the tissue found between these parts. The invasion of the round or spindle cells displaces the tubules further and further from one another and at the same time compresses them so that their shape becomes completely altered, their lumen entirely obliterated, and their imperfect epithelial cell-lining destroyed. The deposition of interstitial fibrous tissue in these sarcomata is not uncommon and in some instances it is present in a marked degree. No instance of cartilage being present with the sarcomatous elements in a testis which has not reached the scrotum is on record. This is a matter of some interest seeing that cartilage is comparatively frequently found in the spindle-celled sarcoma of the fully descended organ. The testis is extremely rich in minute lymphatic vessels which surround the tubules and, uniting to form larger vessels, run in the septa between the compartments of the gland. Most of the lymph is conveyed by these channels to the corpus Highmori and thence by way of larger vessels, constituting the lymphatics of the cord, to the lumbar lymphatic glands. Efferent vessels from these glands pass to the receptaculum chyli, and thus in one case at least there was an enlargement of the left supra-clavicular glands in sarcoma of an inguinal testis. Secondary growths in every way resemble the primary lesions. They may be found in the lungs, liver, spleen, and peritoneum, in addition to the lumbar glands. Blood-vessels, particularly the inferior vena cava, are sometimes the site of the secondary deposits whereby a blocking of their lumen is caused which very seriously impedes the return of blood from the lower extremities. Œdema may also be produced by the direct pressure upon the vena cava of an intra-abdominal sarcomatous testis or by the diseased lymphatic glands in the right lumbar region. By microscopical examination there will be seen either round or spindle cells disseminated in the meshes of the connective tissues of the gland, and in some instances it is difficult to say whether the trabeculæ present are those which originally existed in the gland or are themselves part of the new growth. As in cases of sarcoma of the fully descended organ, there is but little recorded that is of much value as to the real cause of the sarcoma of the partially descended testis.

On analysing a considerable number of instances of sarcoma of an imperfectly migrated testis—in fact, all those which it has been possible to find in medical literature up to the present year—some interesting facts become apparent. It will be found that the disease begins most usually between the ages of 20 and 40 years, and it is therefore a disease rather of middle life. Sarcoma of the fully descended gland is not uncommon in quite young boys. There does not seem to be any marked difference as to which side the new growth attacks. This is not altogether in accord with the fact that the right testis is the one that is most frequently the seat of arrest. There is, therefore, possibly some reason why the testis on the left side should be more frequently the seat of the new growth, but none suggests itself to me. The position that the testis has been found in when disensed is also of interest. Inguinal inclusion is the most common place for the arrested testis to be found, and thus it is the general position in which sarcomatous imperfectly descended testes are discovered. After this position the abdominal retention is the next most productive of a malignant new growth, which again is of interest from the fact that abdominal inclusion is not the second most common position for the testis to be found, just below the superficial abdominal ring being more usual.

A definite history of an injury, such as a blow, a squeeze, &c., is not infrequently given in the cases where sarcoma attacks the testis lying in the scrotum, but when the lesion affects the imperfectly descended testis a predisposing cause of this nature is not nearly so common or so clear. On the other hand, it must be remembered that the testis which lies in the inguinal canal is subjected to numberless though probably slight occasions of violence, which may pass in the greater number of instances without any notice being taken of them. As was shown when inflammation of the arrested organ was being discussed, muscular effort, blows, extrusion of the organ suddenly through the deep or through the superficial abdominal ring, all contribute to the onset of inflammation and possibly also to the incidence of neoplasms. When the testis is retained within the abdominal walls it cannot be so exposed to the risk of injury, and yet it has been seen that the abdominal inclusion does not by any means protect the gland from the onset of malignant disease. It is conceivable that the pressure to which the testis is so repeatedly subjected when it lies in the inguinal canal may produce such an effect upon the ill-developed gland as to induce some fœtal relic within it to start into malignant activity in the form of a sarcomatous growth. On the other hand, it is possible that some injury may result in the formation of reparative material which being arrested at that stage when its cells so closely resemble those of sarcoma this new growth may actually later derive its origin from this source. And, lastly, it is possible that the injury to which the testis is exposed may result in such an inflammation that the tissues of the gland are unable to withstand the ingress of parasites, should such be the essential cause of the new growth. Previous inflammation, other than that which has been due to trauma, is rare also apparently in cases of new formation in the arrested testis. There is, however, at least one case in which the malignant trouble was preceded by a double orchitis secondary to parotitis, but the interval of time between the two affections was considerable—namely, 23 years.

An associated hernia is such a common complication of an imperfectly descended testis that caution must be used in considering that it has any influence on the production of malignant disease, though this has been much asserted by some observers. In the 854 instances of arrest of the testis accompanied by hernia which have been already mentioned in no single instance was a sarcomatous growth also present. Further, out of 26 cases of sarcoma of the imperfectly descended testis only two had a hernia associated with the new growth, and in neither of these did the protrusion seem to have any bearing whatever on the production of the neoplasm. Two other patients had worn trusses for supposed herniæ, but only with a possible relation to the onset of the new growth in one. But there are two facts that must be taken into consideration under this heading—namely, that many instances of imperfect descent of the testis are mistaken for hernial protrusions and a truss is applied, and also that a hernia is in reality so frequently present with the arrested testis that a truss is needed, and therefore most of the cases in which a sarcoma has developed were in patients who had been wearers of trusses. It is, however, extremely doubtful whether a truss worn over the inguinal canal in the case of an inguinal inclusion of a testis really does produce harmful pressure on the gland provided that the truss is of right construction and size. On the other hand, the pressure of a truss if applied over a testis that is lying just below the superficial abdominal ring is ever prone to excite the occurrence of inflammation in the organ, but sarcoma, as has been seen, is rare in a gland so placed. Heredity does not seem to have the slightest influence on the production of sarcoma of the imperfectly descended testis. The persistence or not of embryonic traces or cell elements—possibly such as might reasonably be termed "rests"—in testes that have failed to reach their normal resting-place is a matter which requires a closer histological investigation, and for this purpose, among others, every imperfectly descended testis that is removed should be submitted to a rigid microscopic examination. Further, in every castration for early sarcoma—and such early removal should be of increasing frequency, and whether the gland affected is an imperfectly or a fully descended one—the testis should be considered as likely to throw some light on this till now obscure question of etiology.

It is well recognised that vestigial elements in imperfectly developed organs are peculiarly liable to give origin to malignant growths. As was shown in the first lecture, the examination of testes which have failed to reach the scrotum reveals in most of the instances two distinct abnormalities. Firstly, the seminiferous tubules are atrophic or undeveloped and present no signs of spermatogenesis; and

secondly, there is a distinct increase in the interstitial cellular elements. It is open to question whether these latter cells, which appear in so much larger numbers than they do in normally placed testes, have an epithelial or mesoblastic origin. If epithelial, then they may be the remains of the lining of aborted seminiferous tubes; if mesoblastic, probably they are the remnants of the Wolffian body. Although there does not at present seem to be sufficient evidence definitely to determine their source, yet on the whole it would appear that they owe their existence to mesoblastic rather than to epiblastic tissue. The cells, moreover, are somewhat like those of the adrenal, particularly the cortex of this structure, but it is doubtful whether they can be taken as the remains of such. As has been stated, the majority of malignant growths of the testis which has been arrested are of a sarcomatous nature, and the occurrence of these interstitial cells may therefore be an explanation of this frequency.

While it has already been noticed that carcinoma of the imperfectly descended testis is less common than sarcoma of the gland, yet it is probable that this is even more distinctly so from the fact that many of the cases which have been recorded as "cancer," "encephaloid," or "medullary" disease by the older writers were in reality examples of sarcoma rather than of carcinoma. Several varieties of carcinoma are met with in the imperfectly descended testis: the encephaloid or medullary, the schirrous and the colloid, and, lastly, a rare form of chondro-carcinoma. The cells are spheroidal, oval, or polygonal. They are abundantly rich in protoplasm, and do not, as a rule, have very distinct outlines, both of which peculiarities are strong evidence of their epithelial origin. The most probable source of the cells, and, therefore, the growth of which they form the chief part, is from the imperfectly formed epithelial elements of the seminal tubules. Another reason why carcinoma of the arrested testis is comparatively uncommon may be found in the fact that there is so little active epithelium present in the poorly developed organ. In the fully descended gland the tubular epithelium is constantly, between puberty and the involution of the testis, undergoing division and subdivision for the formation of spermatozoa, a condition which has a predisposing influence upon the incidence of carcinoma.

While sarcoma of the arrested testis occurs most usually between the ages of 20 and 40 years carcinoma is, on the whole, a disease of rather later life—namely, between the ages of 30 and 50 years. The two sides of the body are equally liable to the affection. Of the more recent cases in which the microscopical examination has proved the presence of undoubted carcinoma the testis has been found in the abdomen, the inguinal canal, and just below the superficial ring. There is no record of a case of carcinoma of the testis when lying in the perineum or in Scarpa's triangle.

With regard to causation, injury would seem to have rather more association with the onset of carcinoma than it had with the development of sarcoma, and this particularly when the testis has been lying in the inguinal canal. Previous inflammation has apparently no very definite bearing upon the origin of the disease. In a few instances there has been a history pointing to some hereditary influence. Secondary glandular and visceral infection is very rapid in its appearance and the case runs a peculiarly quick and fatal course.

Hydrocele in connexion with imperfect descent of the testis.—When the testis is arrested within the abdominal cavity no tunica vaginalis testis is developed, and therefore there can be no intra-abdominal hydrocele formed. But when the organ has passed beyond the bounds of the abdominal wall, then a processus vaginalis testis will always be found of a smaller or greater extent, and a hydrocele may therefore be in evidence. Further, it is true that when a testis is retained within the abdomen sometimes a processus vaginalis may be drawn down into the inguinal canal, the scrotum, or even into the perineum or Scarpa's triangle. It is possible, then, to have a hydrocele outside the abdominal wall with a testis which is completely retained within that cavity. A short classification of hydroceles in connexion with imperfect descent of the testis may be given as follows: inguinal, scrotal, bilocular, and trilocular, peritoneal, and in Scarpa's triangle. An inguinal hydrocele may be further subdivided into two classes—one in which the testis is still within the abdomen and the other in which it is lying in the inguinal canal. When the testis is within the abdomen the processus vaginalis may still communicate with the general cavity of the peritoneum, or it may be shut off from that space, and the same difference may be found in association with the inguinal testis. When the processus vaginalis has been formed, but the testis is arrested within the abdomen, it is usual for the pouch of peritoneum to remain in communication with the general cavity of the serous membrane. Fluid, therefore, which may be found in it has either been formed *in situ*, or has drained down from the peritoneal cavity. In both cases it will be freely reducible, or rather it will flow back into the abdomen when the patient assumes the horizontal posture. When the communication is obliterated, then, when fluid collects, there will be irreducibility and the cyst will present all the signs of an inguinal hydrocele of the processus vaginalis, except for the fact that a testis can never be felt within it.

Inguinal hydrocele with the testis in the canal is the most common form of hydrocele in association with an arrested testis. When there is a communication of the processus vaginalis it may be either a very free one or it may be blocked by the testis. When the tunica vaginalis is shut off from the general cavity of the abdomen the hydrocele may be unilocular or multilocular. The fluid found within is of the ordinary serous hydrocele nature or is inflammatory in its origin and characters. In a certain number of instances the testis, when it occupies a position at the upper limit of the canal, acts as a plug to the deep abdominal ring and thus prevents the return of the fluid within the sac except under special conditions. Unilocular hydroceles with the communication with the abdominal cavity shut off may be acute or chronic, the acute being as a rule due to inflammatory attacks, while the chronic is probably caused by slight recurrent inflammations. The multilocular hydroceles are the outcome of inflammation, which has not only caused the formation of the fluid but has led to production of adhesions which have divided up the cavity of the tunica vaginalis. Truss pressure is not a marked cause of hydrocele, for out of 936 cases in which a truss had been worn only 32 were complicated by a hydrocele. A scrotal hydrocele is one in which the processus vaginalis testis has passed into the scrotum beyond the place of the arrest of the accompanying testis. As a rule, that part of the pouch which lies below the superficial abdominal ring becomes shut off from the rest before the onset of the hydrocele. Such a condition is not so very uncommon. The presence of the fluid in the upper part of the scrotum may be mistaken for the testis in its normal position, particularly if the scrotum on that side is fairly well developed and there is no evidence of any inguinal swelling. These scrotal hydroceles do not, as a rule, reach any great size. The peritoneal process accompanying the testis is by no means infrequently drawn down into the scrotum beyond the site of the arrested testis and in such a case the original communication with the general cavity of the abdomen may remain patent or it may become cut off. If it is closed, then all the conditions necessary for the development of a bilocular hydrocele are present and the same may be said of those instances in which the imperfectly descended testis acts as a plug at the deep abdominal ring, preventing the return into the abdomen of any fluid which has collected in either portion of the processus vaginalis, the inguinal or the scrotal. Distension, therefore, of the inguinal and scrotal parts of the peritoneal pouch will lead to the formation of one variety of bilocular hydrocele and a swelling will be apparent both in the groin and in the scrotum. Both of these portions may be tense or one may be lax and the other firm, and on pressure being applied to the less tense sac the other will become more firm immediately. Fluctuation can also be readily obtained through from one to the other. As a rule, both portions are translucent and although the inguinal portion may have a forward impulse on coughing, the scrotal part is not thereby affected. When the communication with the abdomen is cut off, the fluid in both of the swellings will be irreducible. Where an aperture still exists, even though the testis may block the opening, there will be variations in the fulness and the tenseness of the swellings, and under certain conditions the whole of the tumour may be made to disappear by reason of the reduction of the fluid. If the inguinal portion can be emptied the testis, smaller than normal, can usually be readily palpated in the inguinal canal and generally at the upper end of that passage. In some instances the scrotal portion of the sac may be completely shut off from the inguinal part and both become distended with fluid. This separation is commonly at the site of the superficial ring.

A second variety of hydrocele occurs when the testis is arrested whether within the abdomen, in the inguinal canal, or just below the superficial ring, and that portion of the processes vaginalis which lies in the canal becomes distended with fluid and, being unable to contain more without further space, a secondary sac is formed in one of the planes of the abdominal wall. Sometimes this additional portion is protruded in the space between the aponeurosis of the external oblique and the muscular tissue of the internal oblique muscles. In other cases, less common, with the testis lying without the superficial ring, the primary pouch of peritoneum also traverses the same aperture, and then, instead of entering the scrotum, which may be practically absent, mounts upward and outward on the abdominal wall in the plane between the aponeurosis of the external oblique and the skin.

The third variety is very rare and consists of a secondary sac lying in the extra-peritoneal tissue behind the body of the os pubis in the pelvis. The three varieties may be respectively termed the deep interstitial, the superficial interstitial, and the properitoneal. Sometimes the superadded sac may become of enormous size and may mount up on the abdominal wall so as to lie in such position as to simulate a hydronephrosis.

A few instances of trilocular hydrocele have been seen. In these there is, in addition to the two pouches of the bilocular hydrocele just described, a third pouch which lies in the upper part of the scrotum. The arrested testis is to be found either in the canal or just below the superficial ring. Probably in the majority of instances the inguinal and the scrotal portions are the first to be formed and subsequently the interstitial diverticulum is produced. When the testis has passed into the perineum the processus vaginalis that accompanies it may become the site of a collection of fluid, usually as the outcome of an inflammatory process in the ectopic organ. In like manner a testis which has passed into Scarpa's triangle is liable to have its surrounding peritoneal sac distended with fluid as the outcome of inflammation.

Hernia in association with imperfectly descended testes.—It is probable that a hernial protrusion is the most frequent pathological condition associated with imperfect descent of the testis. The exact frequency in which inguinal hernia accompanies imperfect descent of the testis is difficult to estimate, but from a review of a large number of cases it is distinctly more than half. As has already been seen, in the majority of cases of arrested testes there is an associated want of formation or arrest of development of the annexa. Thus it happens that there remains a patent process of the peritoneum into which abdominal viscera may descend. It is, however, necessary, as in the herniæ of congenital type with a testis normally placed, that there should be some other besides this primary predisposing factor, and, indeed, other than the imperfect development which so often accompanies imperfect descent. Neither of these two factors is in itself sufficient actually to determine protrusion. 35 per cent. of the cases of herniæ with arrested testis occur in the first year of life, while of those in persons who are not affected with imperfect descent, only 7·7 per cent. commence before 12 months of age, showing that the congenital defect has an undoubted influence on the onset of the protrusion. Inguinal and abdominal inclusion favour the early development of a hernia. The exciting causes may be such as are present in other so-called congenital herniæ—viz., disease of the lungs, over-distension of the abdomen by intestinal gas, obstruction to the outflow of urine, constipation, and other less common conditions. It may be also true that the presence of the testis in the inguinal canal may in itself prevent the proper sphincter-like action of the lower fibres of the internal oblique and transversalis. This and other reasons would seem to show that the position in which the testis is arrested plays an important part in the frequency with which a hernia is developed.

There are at least five varieties of inguinal hernia associated with imperfect descent of the testis—namely, bubonocele, scrotal, interstitial, cruro-scrotal, and superficial perineal. As would be naturally expected a bubonocele is the most frequent form of inguinal hernia to be met with in association with imperfect descent of the testis. It is, moreover, the early stage of several of the other varieties. With the non-closure of the processus vaginalis nothing is more likely to happen when the testis is lying in the inguinal canal than that some of the abdominal viscera should prolapse into the waiting sac. The same may happen when the testis is completely retained within the abdomen, provided that a peritoneal pouch has entered the canal and has remained patent. As a rule the testis can be palpated and its exact position made out. Sometimes the contents of the sac will obscure the presence of the gland which, however, can be felt on the return of the viscera within the abdomen. The deep ring, the potential opening in the transversalis fascia through which the organ has entered the canal, is usually small and therefore strangulation, should it occur, is frequently very severe. There is generally an intimate relationship between the back of the peritoneal pouch and the short spermatic cord and their separation the one from the other may be a matter of some difficulty in a radical operation upon the hernia. In some cases there will be found adhesions between the contents of the sac and the upper part of the testis, thus rendering the hernia an irreducible one. In the history of the case it is frequently stated that the swelling which has been noticed in the inguinal region becomes larger on the advent of the hernia. A bubonocele may also be associated with a testis which has transgressed the confines of the inguinal canal and is lying in front of the body of the os pubis. Further, a scrotal hernia may be associated with imperfect descent of the testis. By this term is meant a protrusion which, having left the inguinal canal through the superficial ring, has passed into the scrotal tissue and has not distended the fold between the scrotum and the thigh. A scrotal hernia is further covered with dartos tissues and expands more or less the scrotum, which, until the entrance of the hernia into it, has remained undistended owing to the absence of the corresponding testicle. When the scrotum is but poorly developed then the hernia will actually have to dilate the parts so as to obtain room for itself. The explanation of the scrotal protrusion lies as a rule in the fact that a pouch of peritoneum is so frequently drawn down by the gubernaculum testis into the region of the scrotum beyond the site of the arrested organ.

By an insterstitial hernia is understood an inguinal protrusion, a part or the whole of the sac of which is placed in one or other of the planes of the abdominal wall, transgressing the ordinary limits of an inguinal hernia. Interstitial herniæ may be associated with imperfect or abnormal descent of the testis. On the other hand, they are also found present in males whose testes have reached their normal position in the scrotum. And further, they actually occur in female subjects in a proportion greater than in the male sex; and lastly, all instances of inguinal hernia associated with imperfect descent of the testis are not of the interstitial variety. These statements of fact go to prove conclusively that imperfect transition of the testis is not a necessary accompaniment of interstitial inguinal hernia. An examination, however, of a large number of cases of this form of protrusion in males leads to clear evidence that imperfect descent of the testis has a marked bearing upon a development of the hernia. Nearly 1 per cent. of inguinal hernia in male subjects is of the interstitial variety; 5 per cent. of those who show hernial protrusions with imperfect descent of the testis present one or other of the varieties of interstitial hernia. In males 73·4 per cent. of interstitial inguinal herniæ are associated with more or less imperfect descent of the testis. The position of the arrested testis is a matter of great interest in view of the relationship which undoubtedly exists between the imperfect descent and the interstitial sac. The position, however, which is observed is usually that which is found at the time when the patient presents himself for treatment, and it does not, therefore, necessarily imply that this was the site of the testis when the hernia first made its appearance. It is not common, however, for the testis to alter its position after the commencement of a hernia, though undoubtedly this may occur in some cases. In the majority of instances the arrested testis is found in the inguinal canal and at a position towards the lower end of that space. Next, it is most usually seen just below the superficial abdominal ring, and in some of these latter cases it is conceivable that it may have been pushed by the oncoming hernia through the superficial ring. In a few instances it may be found lying on the aponeurosis of the external oblique and towards the anterior superior spine of the ilium, again having reached the spot by the pressure exerted by the protruded viscera.

Several theories have been advanced to explain the relationship between the arrest of the testis and the development of an interstitial hernia. First, there is the position of the testis itself, for if lying in the inguinal canal and especially if occupying a position at its lower and inner end, tethered by a short cord, it may act as a barrier to the exit

of the contents of a hernial sac through the superficial abdominal ring. Repeated expiratory efforts drive the viscera into a patent processus vaginalis, and after a time tend to force the testis and the viscera from the canal through the superficial ring. The gland is, however, prevented from being extruded by its short cord and the peritoneal pouch dilates in the plane of least resistance, but, on the other hand, the smallness of the superficial ring itself may be the cause of the imprisonment both of the testis and of the contents of the sac. Secondly, want of muscular development in the inguinal region is not infrequently present with a want of descent of the testis, and may be a reason why the hernial sac insinuates itself in the planes of the abdominal wall, though it is open to question whether the abnormal condition of the muscles is not rather the result of the pressure exerted by the hernial protrusion than the cause of the formation of the sac. Thirdly, it is possible that some abnormal drag of the gubernaculum testis on a portion of the peritoneum near the abdominal opening of the processus vaginalis may cause adventitious pouches to be formed and these lead to the production of an interstitial sac.

There are three chief varieties of interstitial hernia usually described. In the first the sac is found between the aponeurosis of the external oblique and the muscular fibres of the internal oblique and this is the one which is most frequently associated with arrest of the testis. It usually presents an external swelling which is very characteristic in its shape and extent; beginning in the region of the inguinal canal, it mounts upwards and outwards towards the anterior superior spine of the ilium. The whole course of the gradual formation of the tumour can be observed if a patient, after the contents of the sac have been reduced, is directed to lie on his back and cough. There is no other condition that will give the spectacle of a gradually increasing tumour under these circumstances. The shape of the swelling is usually ovoid and its margins are fairly distinct. It is flattened on the surface and does not project far from the abdominal wall. The limits of the tumour may be wide and sometimes it reaches as high as the costal arch, sometimes it may overlap the rectus muscles or may even hang down in front of Poupart's ligament so as to simulate a femoral hernia. The contents of the sac can generally be reduced, though sometimes it is a difficult matter entirely to empty it. When reduction has been effected, the ill-developed testis can be made out lying in the inguinal canal. When there is a scrotal portion as well as an interstitial, the former is usually secondary to the development of the latter and usually indicates that the resistance to the increase in the primary part has become greater than that to the entry of the viscera into the scrotum. The second variety of interstitial hernia is that in which the sac is placed between the aponeurosis of the external oblique and the skin. It also is not infrequently associated with an arrest of the testis. The method in which the sac has arrived at its position may be one of two. Either the peritoneum has been pushed forward and then upward through a gap in the aponeurosis, or the sac, at first lying in the inguinal canal, has transgressed the bounds of this space, protruded through the superficial ring, and finding its way into the scrotum blocked has turned upward on the abdominal wall. In both of these the direction taken by the hernia is that of the least resistance, for the attachment of the deep layer of the superficial fascia to the front of Poupart's ligament would bar its progress into the thigh. As a rule, the external swelling present in the second variety is more pronounced than that of the first. Some help may be obtained in the diagnosis between the two forms by requesting the recumbent sufferer to raise his head and shoulders, and thus throw into action the abdominal muscles, when if the external oblique is placed in front of the sac the hernia will become more tense, but will not evidently increase much, while if the aponeurosis be posterior to the bulk of the swelling then this will be markedly enlarged and its tenseness will only be augmented in proportion to its size. The third form of interstitial hernia is that in which the sac lies in the plane between the transversalis fascia and the peritoneum, that is, in the extra-peritoneal tissue. This is a rare form and one which is not so commonly associated with imperfect descent of the testis. There is usually a scrotal portion of the sac in addition to the properitoneal. In almost every case the additional portion of the sac within the abdominal wall has not been recognised until after death or during an operation on account of the strangulation, for there is no external swelling and it is rare that the deeper part of the sac can be palpated. There are two chief sites in which the secondary sac may be placed, one the iliac fossa and the other the prevesical region.

By a cruro-scrotal hernia is meant a hernial sac which distends not the scrotal tissues but the fold of skin which is found between the scrotum and the thigh. The hernia, therefore, will be covered with ordinary cutaneous tissue and not with dartos. It is always associated with an imperfect or abnormal descent of the testis, and the hernia follows the organ. The testis, usually an imperfectly developed one, having left the inguinal canal, is for some reason—probably either a want of development of the scrotal tissue or a tenseness of the fascia at the entrance of the scrotum—prevented from continuing its further descent into that region. It will therefore remain permanently in the cruro-scrotal fold, or pass into the perineum or possibly into Scarpa's triangle. If the processus vaginalis testis which accompanies it remains patent viscera may descend into it and gradually distend the fold so as to form a cruro-scrotal hernia. As the hernia progresses the pouch becomes larger and more definite, and hangs directly downwards and does not pass backwards into the perineum. On examining a patient who is the subject of this form of hernia it will be first noticed that the scrotum is either imperfectly developed on one side or, being developed, it is not distended. Lying external to it and separated from it by a distinct sulcus is an adventitious sac covered with normal skin. On the patient being requested to cough an expansile impulse will be felt in the swelling. The contents of the sac are usually reducible and after reduction a small testis may usually be felt fixed at the bottom of the pouch of skin which, when the viscera are not distending it, hangs lax and is thrown into folds.

A hernia which accompanies the testis into the tissues of the perineum may be designated a superficial perineal hernia, it being termed superficial to distinguish it from that rare form of perineal hernia which leaves the pelvis through a gap in its floor. The course of the descent of a superficial perineal hernia is from the abdomen, along the canal, through the superficial ring, past the scrotum near its entrance, and then backwards towards the margin of the anus. This form of hernia is necessarily rare, for perineal ectopia of the testis is uncommon, and even when present an accompanying hernia is seldom seen. It appears as an elastic swelling on one side of the perineum with an expansile impulse on cough, frequently resonant on percussion, and usually reducible on pressure. After the return of the contents of the sac the testis, sometimes well developed, can be felt lying by the side of the anus and often tethered by a band, probably of the gubernaculum, to the region of the external sphincter or tuberosity of the ischium.

NEUROLOGICAL FRAGMENTS.

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No. XX.

LOWEST LEVEL FITS.—HYPOTHESIS ON THE MECHANISM OF LARYNGEAL CRISES IN TABES DORSALIS.—THE PHYSIOLOGICAL FACTOR IN SYMPTOMATOLOGIES.—REMARKS ON SOME OTHER LOWEST LEVEL FITS.—TERMINAL TONIC SPASMS.

A LARYNGEAL crisis is one of what (THE LANCET, Feb. 16th, 1895, p. 394) I called the Sub-maladies of Tabes Dorsalis. It is a respiratory, or a respiratorily beginning, fit; it is a "Lowest Level fit," a "bulbar fit." Even a slight laryngeal crisis is a rudimentary respiratory fit. In severe laryngeal crises loss of consciousness and convulsion may occur. Grasset in his important work ("Maladies du Système Nerveux," 4th ed., vol. i., p. 548, chapter on "Progressive Locomotor Ataxy") writes: "Raymond a bien décrit les divers troubles bulbaires laryngo-bronchiques, et notamment ce que Charcot et Cherchewsky ont étudié sous le nom de *vertige laryngé*." The following is by Raymond: "Au moment de la crise, le malade éprouve

une sensation de strangulation, de chaleur au larynx, suivie d'un véritable spasme de la glotte. Puis le malade perd connaissance; il tombe sur le sol, *il est pris de secousses comme un épileptique* [no italics in original]. Après quoi il se relève, et cette attaque peut se renouveler un certain nombre de fois." The following quotation from Marie's very valuable work, "Lectures on Diseases of the Spinal Cord," New Syd. Soc. (translated by Lubbock), p. 278, gives Charcot's account of the *laryngeal ictus* in tabes: "..... Usually a burning sensation is first felt in the region of the larynx, representing a form of aura, which is followed by a dry cough occurring in short hacks, the patient then falls to the ground in a state of unconsciousness, and most often general flaccidity, whilst epileptiform convulsions sometimes occur, causing the attack at times to resemble those which occur in epilepsy; the face is usually livid."

The convulsions and loss of consciousness result, I suppose, from asphyxia set up by spasm of the muscles closing the glottis and perhaps from spasm of other muscles of the thoracic cage. We must bear in mind that whilst highly supervenous blood annuls the function of convolutions, at least of those of the Rolandic area (motor province of the Middle Level), it strongly stimulates the Respiratory and some other "vital" centres of the Lowest Level.

In a severe laryngeal crisis the glottis is in an extreme expiratory condition; possibly, it is completely closed. In this note I state an hypothesis as to the neuro-muscular mechanism of this spasmodic closure or narrowing. It is an impossibility that this positive, or rather super-positive, thing can be caused, in a strict sense of the word cause,[1] by a negative lesion of any part of the nervous system. Yet in most cases of these crises in tabetics there presumably *is* a negative central lesion, one answering to paralysis of the abductor muscles of the vocal cords (Semon)—a negative lesion of the medulla centres for these muscles, some motor centres of the Lowest Level. I shall in what follows consider cases in which the abductor muscles are paralysed until I come towards the end of this note when cases of tabetic patients subject to laryngeal crises, who have no discoverable paralysis of these muscles, will be spoken of.

The adductor muscles of the vocal cords and, inferentially, their medulla centres, some centres of the lowest level, are, in the cases I now deal with, intact and so, too, is the Respiratory, medulla, centre, a Superior centre of the Lowest Level.[2]

Applying to a particular case a notion from Duchenne as to muscular action in general, I suggest that in normal conditions the abductor and adductor muscles of the vocal cords act in a "coöperation of antagonism" ("in amicable antagonism")—that when the glottis of a healthy man is widened there is *preponderating* action of the abductor muscles with *moderating* action of the adductors, and that when it is narrowed, there is *preponderating* action of the adductor muscles with *moderating* action of the abductors. And correspondingly, that there is simply preponderating activity, as the case may be, of the abductor or of the adductor (medulla) centres.[3]

We must bear well in mind that for respiration proper these two laryngeal motor centres, abductor and adductor (and also phrenic and costal motor centres, other centres of the Lowest Level) are some of the fundamental centres of the Lowest Level and are subordinate to the Respiratory (medulla) centre, one of the Superior centres of the Level. There is no reason to suppose that the abductor and adductor muscles of the vocal cords (similarly for muscles, which for the present I ignore, of other parts of the thoracic cage) ever act *respiratorily* (Organic Duty), except at the instigation of the Respiratory (medulla) centre and by intermediation of the medulla abductor and adductor motor centres for these muscles. I say "act respiratorily" because I suppose (THE LANCET, Feb. 23rd, 1895, p. 476, and THE LANCET, Dec. 16th, 1899, p. 1659) that the laryngeal motor centres (the medulla abductor and adductor centres spoken of) when they serve in an Animal Duty—that is, in "voluntary operations," that is, in operations of cerebral (Higher Level) initiation, for example, preparatory to, and during certain kinds of "effort" (as when lifting a heavy weight with one hand) or in drawing in the breath when told—are acted on (as are also the costal motor centres for movements of another part of the thoracic cage) by intermediation of fibres of the pyramidal tract which on their way down from motor centres of the Middle Level (Rolandic Region) of the cerebral subsystem pass by and, so to say, evade the Respiratory centre. I went further in speculation, suggesting that during these animal services of the thoracic cage the (medulla) Respiratory centre is inhibited by cerebral Higher Levels.[4]

To repeat. In health the Superior, the Respiratory, medulla, centre, my supposition is, puts both the abductor and adductor muscles of the vocal cords in action during inspiration proper (the action of the abductors then preponderating) and does or can put them both in action in expiration (the action of the adductors then preponderating); in each case the Respiratory centre acts on the vocal cords by intermediation of the subordinate abductor and adductor, motor centres.[5]

Besides governing the abductor and adductor motor centres of the medulla region of the lowest level, the Respiratory (medulla) centre—I am still dealing with healthy conditions—governs also those other motor centres of the cervical and dorsal regions of the lowest level which are for the diaphragmatic (phrenic centres) and costal movements (costal centres) of the thoracic cage. Now speaking of tabes abdominal muscles are, no doubt, engaged expiratorily in some stage of severe laryngeal crises. To return to a consideration of the mechanism of these Crises. (What I shall call the Respiratory Nervous System of the Lowest Level is, of course, much more complex than I describe it.)

So far I have spoken as if in the case of those tabetic patients who are subject to laryngeal crises the only flaw in the Respiratory Nervous System of the Lowest Level is a *negative* lesion of, or of more or less of, the motor centres for the abductor movements of the vocal cords. Presumably there is something more than this negative lesion; there is also, I submit, an opposite, a super-positive, lesion, a so-called "irritative state," of some sensory medulla elements—a super-positive functional lesion produced by some pathological process.

In those tabetics who are subject to laryngeal crises it is said that there is hyperæsthesia of some part of the mucous membrane of the larynx. This, however, is, I suppose, understood to mean that there is an "irritative state," or as I prefer to say, a super-positive functional state of medulla *sensory* nervous elements representing that part.[6] We are here, it will be seen, assuming that there are sensory medulla centres subservient to the Respiratory centre; these are sensory companions of the motor abductor and adductor centres which are subordinate to the Respiratory centre. In healthy people the respiratory centre is, or can be, acted on *upwardly* from the mucous membrane of the larynx by intermediation of these subservient sensory centres; and the muscles of the vocal cords are acted on *downwardly* by the

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[1] See remarks on the use and abuse of the words "cause," THE LANCET, Dec. 12th, 1896, p. 1662.

[2] See THE LANCET, Feb. 23rd, 1895, p. 476, on Superior and Subordinate Centres of the Lowest Level.

[3] Possibly what we call the abductor medulla centre simply represents movements of the abductor muscles much more than it does movements of the adductors; similarly, *mutatis mutandis*, for the adductor centre.

[4] I here refer the reader to a case of supposed pneumonia recorded (No. XII., THE LANCET, Dec. 22nd, 1894, p. 1472), in which with loss of the respiratory movements of the intercostal muscles, perfect "voluntary" (cerebral) movement of these same muscles remained possible. The knee-jerks were absent.

[5] The term centre, as here applied in the expressions "abductor centre" and "adductor centre" and on other occasions, is not used rigidly. Horsley and Semon (Phil. Trans., vol. 183 (1893), pp. 187–211) have, however, found that experimental excitation of two different particular parts of the medulla oblongata produces, of one, adduction, of the other abduction of the vocal cords." (In beginning their investigations on this matter Semon and Horsley found abduction alone to be represented in the medulla oblongata).

I may here mention that Risien Russell has found that movements both of the adductors and of the abductors of the vocal cords are represented in the cortex cerebri of the dog. The former (adduction) are represented in the præcrucial gyrus, just where it terminates in the narrow isthmus which connects it with the anterior composite gyrus, as had been previously found by Krause and by Horsley and Semon. The latter (abduction) is represented in the anterior composite gyrus just behind the supra-orbital sulcus and below the level of the imaginary prolongation of the coronal sulcus, to touch the supra-orbital sulcus. "The Influence of the Cerebral Cortex on the Larynx." Phil. Trans., vol. 187 (1876) B. pp. 59–81.

[6] That there are so-called "irritative" states of some central elements of the lowest level in many tabetic patients is clear; I refer to "lightning pains"; these pains (super-positive things) cannot be owing to a negative state (sclerosis, loss of function and structure, destruction, of fibres), but must be owing to an exactly opposite functional state of some central nervous elements, I suppose to a so-called "irritative" condition of cells of sensory centres of the cord. In "Neurological Fragments" (THE LANCET, March 5th, 1892, p. 513) I spoke, quoting Semon, of an "irritative state" of the adductor centres in laryngeal crises. I now suppose, as I have said in the text, that these motor centres are healthy and that their over-action in these crises is brought about in a very indirect way.

Respiratory centre by intermediation of the subordinate motor, abductor and adductor, centres. In laryngeal crises the action *upwardly* on the Respiratory centre is supposed to be far greater than in health, because those sensory centres, which are on the upward path from the mucous membrane of the larynx to the Respiratory centre, are in an "irritative" condition and are thus intensifiers. And in those cases there are no longer abductor centres to be influenced by the greatly increased downward action of the respiratory centre.

I stay here to remark that, in scientific exposition, I do not use the word "functional" in senses in which it is used clinically by many medical neurologists—as it is used, for example, when it is said of a patient "that all his symptoms are functional." I use it as the adjective of the word function. The function of nervous matter is to "store up" and to "expend" energy (anabolism and katabolism). Hence I use the term function for the dynamics, the physiology, of the nervous system. In what I call a Negative Lesion there is defect or loss of function, defective or lost expenditure of energy—a crude hypo-physiolegical state; or if the negative lesion be a destruction-lesion, there is loss of function and of structure too—there is a structural and functional vacuum. In a super-positive lesion there is excess of function; there is an increased expenditure of energy—a crude hyper-physiological state. (The separation into structure, function and nutrition is, of course, artificial.) I venture to think that there is no such thing as a functional lesion without a corresponding alteration of nutrition or of structure or of both. But then I must say that I only apply the terms negative and super-positive *lesions* to those functional states which are *produced by pathological processes or by injury*. In a patient subject to laryngeal crises, according to the hypothesis stated, there are two opposite functional *lesions;* a negative one (loss of function and of structure too) of the abductor centres and a super-positive one, a so-called "irritative lesion," of sensory laryngeal centres; these lesions, negative and super-positive, are produced by pathological processes. And although the Respiratory centre and the adductor centres are engaged in the crises, these are healthy centres which are compelled *ab extra* to function excessively (hyper-physiologically); they are not the subjects of any pathological process and thus there is not what I should call a *lesion* of either. I speak so far of the first stage of the crises; in the second stage when asphyxia comes on, we may say that these centres are in a pathological state from great super-venosity; there is whilst that super-venosity lasts a change in their metabolism which makes them more explosive. (Of course in increased function of healthy nervous elements there will be correspondingly greater metabolism than in their normal activity.)

To return to the crises, with some recapitulation. The hypothesis is that there are in most of those tabetic patients who are subject to laryngeal crises, two persisting abnormal functional lesions—not only a persistent *negative* functional (in this case a complete structural, a destruction) lesion of motor elements (of the subordinate abductor centres), but also a persistent *super-positive* functional, so-called "irritative," lesion of sensory elements (of the subservient sensory centres). The two opposite functional lesions are supposed to be the only lesions, *the only things, I mean, which are produced by pathological processes;* the remainder of "the respiratory nervous system of the lowest level" is supposed to be healthy—to be untouched by any pathological process. And yet this healthy remainder, or much of it (the adductor centres and the Superior, the medulla, Respiratory, centre) is strongly engaged in the crises. That the centres of the healthy remainder are really healthy is shown in most cases by the facts that the tabetic patient with persisting paralysis of the abductors of his vocal cords, breathes ordinarily, I mean in the intervals of laryngeal crises, without particular difficulty or discomfort, and that his voice during talking is but little affected. Yet now and then a laryngeal crisis, a lowest level fit, occurs and the patient may be cyanosed in it by compulsory engagement of these healthy, these innocent, centres.

Now for the hypothesis as to the mechanism of the paroxysm itself. An impulse from a part of the interior of the larynx (the "epileptogenous," or better, the "peripheral," zone) puts the medulla sensory centres representing that part into great activity, they being, from their "irritative" state[7] very susceptible. These *morbid* sensory centres, easily roused into great over-activity, provoke great over-activity of the *healthy* Respiratory centre. Consequently, from this *healthy* Superior Respiratory centre *abnormally* strong impulses come down to *both* (that is on the principle of coöperation of antagonism) the subordinate abductor centres (or properly speaking to the place where these abductor centres once were) and to the subordinate adductor (healthy) centres; the impulses will be especially to the adductor centres, the nisus[8] being for expiration. The impulses coming down from the healthy respiratory (medulla) centre being in the circumstances abnormally strong, there is induced by them abnormally great over-activity of the healthy adductor centres and consequent excessive development of the adductor movements of the vocal cords; moreover, these movements are no longer restrained, because the abductor movements cannot be developed to act in "amicable antagonism" to fight against, the strong adduction. The glottis is very much narrowed, possibly closed. So much for what we call the first stage of the crisis; it may be the sole stage. We shall next consider the *effect* of this induced adductor spasm of the glottis (and possibly also embarrassment or fixation of the chest walls, *vide infra*)—that is the asphyxia; we might call this, the second stage of a severe laryngeal crisis.

As the blood becomes rapidly very super-venous consequent on the narrowing or closure of the glottis, the Respiratory medulla centre will be still more strongly stimulated but in a different way from that stated so far—it will be stimulated by the super-venous blood. In consequence its over-action, its discharge, will become still greater than it was from stimulation by impulses from the interior of the larynx by way of the subservient sensory centres. Thus the Respiratory (medulla) centre will (still, of course, by intermediation of the subordinate adductor centres) make the vocal cords come still closer, or more tightly, together and will keep up the closure of the glottis. For if in those whose respiratory nervous system of the lowest level is *intact*, abnormally strong discharges of the Respiratory (medulla) centre caused by super-venous blood in asphyxia produce, or constitute one factor in the production of, inspiratory, abductor, movements of the vocal cords first of all, they cannot in the crises we are considering produce these movements at all because the abductor muscles are paralysed from negative lesion of their medulla centres. Moreover (see footnote on effects of experimental excitation of the superior laryngeal nerve in some lower animals) the respiratory centre in a laryngeal crisis is, so to say, "tuned for expiration" by the impulses starting from the laryngeal mucous membrane. The asphyxia will increase in compound degree; for the more the thoracic cage is fixed the more venous does the blood become and thus the greater is the stimulation of the Respiratory centre and therefrom still more persistent is the fixation of the thoracic cage.

The convulsion which sometimes occurs in severe laryngeal crises is presumably owing to abnormally strong discharges of the Respiratory centre set up by super-venous blood; crises of this degree are severe asphyxia fits. Doubtless there are, besides discharges of motor centres for movements of the thoracic cage, discharges of other fundamental motor centres of the lowest level produced by the discharges beginning in the Respiratory centre. Possibly, however, discharges of some of these fundamental motor centres of the lowest level are directly induced by super-venous blood. In this, the second, stage of laryngeal crises there is evidently a Respiratory, an asphyxia, a Lowest Level, a bulbar, fit.[9]

[7] "Charcot and Krishaber have shown that the [laryngeal] crises [in tabes] are due to reflex contracture of the muscles adjoining the glottis, a contracture which is due to hyperæsthesia of the mucous membrane [of the larynx], these authors having been able to reproduce it by touching that mucous membrane with a soft body" (Marie: Lectures on Diseases of the Spinal Cord, New Syd. Soc. Trans., by Lubbock, p. 279).

[8] I say the nisus for expiration, because experimental excitation of the central end of the superior laryngeal nerve (which nerve supplies the mucous membrane of the larynx sensorily) produces inhibition of inspiration and stimulates expiration. "The superior laryngeal nerve is remarkable for containing a large number of inhibitory respiratory nerves, or nerves which cause arrest of the respiration in expiration, or even fibres causing expiration. One knows that it is the sensory nerve of the larynx, and that foreign bodies or irritating matter in the larynx excites coughing, i.e., forced expiratory acts reflexly." (Physiology, by Landois and Stirling, ed. 4, vol. ii., p. 821.) And if the nisus in a laryngeal crisis were for inspiration, the glottis would not dilate, the abductor muscles being paralysed; I suppose, on the contrary, if the principle of "coöperation of antagonism" applies, the great excitation on a strong nisus for inspiration must produce closure.

[9] According to what is said in the following quotation there is certainly producible in a dog a lowest-level fit (or rather, so to say, part of one) from asphyxia independently of the higher levels and of the higher parts of the lowest level. "Aussi, un observateur, qui

The loss of consciousness may be partly owing to upward discharges from the Respiratory centre to the cerebral cortex (Binswanger and Horsley) or to super-venosity, or to both.

It may be said that if the mechanism of a severe laryngeal crisis be as stated, if the asphyxia started by closure of the glottis is increased in compound degree to a maximum by increasing stimulation of the respiratory centre by blood getting more and more super-venous, the patient must die in his attack. But, as I mentioned in a former paper (THE LANCET, March 5th, 1892, p. 509), Risien Russell has found [10] that a dog has gone through all stages of artificially produced asphyxia (convulsion, of course, in one of the stages), and yet, on removal of the tracheal clamp, has recovered without artificial respiration.

Mr. Victor Horsley was so good as to make for me some experiments and observations on the condition of the vocal cords during artificially produced asphyxia. (The animals were etherised.) It is of importance with regard to the asphyxia occurring in severe laryngeal crises to know what goes on in the larynx in the asphyxia of otherwise healthy animals in which abductor as well as adductor movements of the cords are possible. The following is the substance of an account written for me by Mr. Horsley.

A cat etherised was tracheotomised; a window was made in the trachea so that the larynx could be viewed from below. At 11.30 A.M. the vocal cords were moving strongly and synchronously with the chest. When the trachea was clamped;—

(A) At the commencement of Inspiration (i.e., abduction);—the cords abduct and remain abducted for about two seconds, and then move synchronously with the movements of the chest which follow and persist during the asphyxial state until towards the end when the cords stop with the chest;—

(B) At the commencement of Expiration (i.e., adduction);—the cords adduct firmly and remain adducted for about four seconds and then move synchronously with the chest as in (A).

If the asphyxial state be kept up until respiration stops and if after that artificial respiration be begun, the following is observed: (*a*) With the *first* insufflation of the chest there occurs an inspiratory movement of the vocal cords (i.e., abduction). (*b*) Next succeed a few irregular movements of the cords partly synchronous with the chest movements which begin to recover and accelerate spontaneously even before the artificial insufflation of the chest is stopped. (*c*) The artificial respiration being stopped it is found that the chest moves rapidly (100 per minute) but that the cords are in strong abduction [11] and remain so. (*d*) Gradually as the effect of the asphyxia passes off the cords begin to move, but very slowly, the abductions being prolonged over the period of two movements of the chest. Consequently the rhythm of larynx to chest is one to three and therefore asynchronous. (*e*) Gradually after about a quarter of an hour normal synchronism is restored.

Mr. Horsley observed the same in a dog except that the abduction arrest of the laryngeal movements was only slightly marked.

In the animals experimented on the abductor muscles and their centres were intact and thus there was inspiratory activity of the vocal cords in asphyxia, a thing impossible in the asphyxia of a tabetic with paralysis of the abductors.

To return to Laryngeal Crises in tabetics. I do not conclude that the internal muscles of the larynx alone are concerned even in the first stage of the severe attacks we call *laryngeal* crises; experimental excitation of the superior laryngeal nerve in a lower vertebrate brings the abdominal muscles into expiratory action. Here is an important matter with regard to operative procedures in tabetic patients subject to severe laryngeal crises. Tracheotomy would obviate the effects of spasm of the adductors of the glottis in a laryngeal crisis, but could not prevent over-activity of other expiratory muscles—those of the abdominal wall, for example. The following quotation from the late Dr. Althaus' work, "Sclerosis of the Spinal Cord," p. 188, is interesting in this regard. In the case of severe laryngeal crises which he mentioned great benefit was derived from tracheotomy, but less severe crises occurred after the operation. Speaking of the severest of three degrees of laryngeal crises, Dr. Althaus wrote (I italicise some words): "The patient may die in the fit, the heart's action being likewise presently arrested. Krishaber has in such a case performed tracheotomy, and thereby probably saved the life of the patient. After the operation the crises became subdued, the laryngeal spasm being much less severe. The patient no longer lost his consciousness in such *fits and seemed to have rather more spasm in the diaphragm than in the larynx*. This man wore a canula for some years afterwards and when he felt an attack coming on, opened it at once in order to allow air to enter the windpipe." [12]

The neuro-muscular mechanism of a laryngeal crisis is supposed to illustrate the same general principle as does that of production of "secondary deviation" of the left eye in the case of paralysis of the external rectus of the right eye, when the patient tries to look far to the right. (I suppose that the lesion is of the trunk of the right sixth nerve.) In both cases there is over-development ("forcing") of one movement consequent on a strong, but yet abortive, attempt to develop an associated movement. There are, however, important differences in the application of the principle to the two cases, that is on the supposition that my hypothesis of the mechanism of a laryngeal crisis is correct. In ocular paralysis there is a negative lesion only, and the "forced movement" (the secondary deviation of the sound eye) is of cerebral (higher level) initiation—is, to speak popularly, the result of strong "volition." In the laryngeal crises of tabes (in which the lowest level alone, not the higher levels, is concerned), there is a sensory super-positive lesion (medulla) which when roused into activity from the periphery (laryngeal mucous membrane) next induces very strong activity of the healthy respiratory (medulla) centre. So much for the upward activity. It is with the downward activity from the respiratory centre that there comes the similarity with the production of secondary deviation of the normal eye in the case of ocular paralysis. To speak figuratively, any efforts there could be for the initial narrowing or closure of the glottis by the greatly over-acting respiratory centre in the asphyxial stage (if there be in healthy people the coöperation of antagonism Duchenne supposed) to produce abduction, would be abortive and would necessarily produce very great adduction; this is just as a strong effort (the impulses in this case starting from higher levels) to turn out, abduct, the lamed right eye (in a case of lesion of one sixth nerve to the external rectus of that eye) are abortive and necessarily produce very great turning in (adduction) of the sound left eye.

The same general principle—that the positive or super-positive parts of symptomatologies in cases with negative lesions are owing to action or to over-action of perfectly healthy nervous elements—that these parts of symptomatologies are in the domain of physiology and not of pathology—has been exemplified (THE LANCET, Dec. 12th, 1896, p. 1662) by the case of thigh-lifting when there is paralysis of the extensors of the feet, and, very hypothetically, by writer's cramp (and implicitly by other occupation neuroses). In the fifth paragraph, *op. cit.*, the same principle is illustrated by what I suppose to be the mechanism of the ataxic gait (underdoing of some movements and overdoing (forcing) of others). I should apply the hypothesis [13] to the other crises of tabes.

regarderait en même temps le tronc d'un chien décapité et le tronc d'un chien asphyxié, aurait peine à reconnaître une différence entre les deux, à déterminer le genre de mort auquel, l'un et l'autre animal ont succombé. C'est que les mouvements, identiques dans les deux cas, sont dus à la même cause, à l'asphyxie: après la décapitation, le tronc, comme la tête, meurt asphyxié." "La Mort par la Décapitation," par le Dr. Paul Loye, p. 116.

[10] Risien Russell has published his researches on this subject, Proc. Roy. Soc., vol. lili., p. 430.

[11] During this persisting abduction Mr. Horsley observed that a swallowing movement of the pharynx was accompanied by the usual closure of the glottis, normal in strength and extent.

[12] In the Medical Times and Gazette, Dec. 15th, 1866, I recorded what I now believe to have been a case of tabes with a laryngeal crisis. I did not then, 35 years ago, make even the diagnosis of tabes. The case is, however, valuable on account of a laryngoscopical examination by the late Sir Morell Mackenzie. Sir Morell Mackenzie diagnosed "paralysis of crico-arytenoidei postici dependent on disease within the cranium." The larynx was examined post mortem by the late Mr. Rivington, and atrophy of these muscles was found. No doubt there was disease in the medulla, but no microscopical examination of it was made. I regret that I did not adopt Sir Morell Mackenzie's advice and direct tracheotomy to be done earlier. Laryngo-tracheotomy was done, but too late to save the patient.

[13] The word "hypothesis" is hardly used; it is sometimes used as if it meant conclusion, a most erroneous use of it, and sometimes for mere conjecture. I am using it in the text in the sense that when I have opportunities for observation I shall attempt so to analyse the symptomatology of gastric and other crises that I may ascertain whether, to speak very generally, there *is* or *is not* underdoing of one movement, or of some movements, with *necessitated* forcing of another or of some others.

The same general principle applies, I think, to all cases of insanity except total dementia and to cases of partial aphasia.

I have not forgotten that laryngeal crises occur in some tabetic patients who have no discoverable paralysis of the abductor muscles of the vocal cords (Semon); to these[14] the foregoing hypothesis does not, it may well be said, apply. But there may in them be the "irritative" state of the sensory, medulla, elements suggested. And once more I urge, having regard to the effects of experimental stimulation of the superior laryngeal nerve, that the nisus of the Respiratory centre when it is stimulated from the "irritative" sensory elements representing the laryngeal mucous membrane, is for expiration, for narrowing of the glottis. I suggest that in the cases where the abductor muscles are not discoverably paralysed the "irritative state" of the medulla sensory elements representing part of the mucous membrane of the larynx is very great.

I will now mention some things which I think ought to be considered when we witness a laryngeal crisis of a tabetic. The limbs are, it is said, convulsed in some severe attacks. But perhaps in some of these attacks there occur only writhings of the limbs as an indirect consequence of arrest of respiration; these writhings, being movements proper, ought not to be confounded with convulsion proper, as I believe is done in accounts of some slight cerebral paroxysms commonly called epileptic. If the limbs were the subject of such an intense discharge as produces convulsion there could not be movements even so little elaborate as those of writhing: there would be tonic or clonic spasm of them and not movements properly so-called. In any case of fits, epileptic or of any other sort, we ought to note the condition of the chest and *whether or not the fit begins thoracically*—begins by fixation of the chest walls or by mere cessation of respiration—with subsequent involvement of the limbs.

I here state the hypothesis regarding patients rendered hemiplegic in infancy by a *cerebral* lesion and who later in life become subject to fits, that in some of the cases the fits are *not cerebral* but bulbar (lowest level fits). Certainly very careful attention should be given to the paroxysms in this clinical group of "epilepsies" to determine whether the *onset* is thoracic, more generally by convulsion of the bilaterally acting muscles (trunk) or by convulsion of the limbs. (So, too, for observations of fits in cases of general paralysis.)

I think it possible—this is merely a speculative inference from reports of friends of patients—that there may occur in some stage of a laryngeal crisis terminal tonic spasms like those of tetany. Such terminal tonic spasms are certainly, in no kind of malady, parts of convulsion proper.[15] We should note whether or not the patient perspires very much during the crisis (supervenosity would account for sweating). If he be deeply asphyxiated, we should note whether his knee-jerks are present or absent (no doubt, however, in nearly every case they will be absent at all times, as part of the tabetic symptomatology). Is there passage of urine or fæces in or just after severe seizures? The passage of fæces might be a result of great venosity and thus not a part of the fit proper, or at least a very indirect result of the nervous discharges in the fit.

In some cases of whooping-cough there occur convulsions which are, I suppose, caused by highly supervenous blood (consequent on severe cough-paroxysms) over-stimulating the respiratory centre. Whether, when in these cases there is considerable supervenosity but no convulsion, there are ever carpo-pedal contractions, I do not know. I believe that these persisting terminal tonic spasms are owing, indirectly, to suspension of the influence of certain cells of the Rolandic cortex, and that when they occur in rickety children in association with, in the intervals of, attacks of laryngismus stridulus, and in some other cases, the cerebral influence is suspended owing to supervenosity annulling the function of small cells of the hand area of the Rolandic cortex. The spasm itself is owing *directly* to permitted over-action of cells of anterior horns for the hands and, as I think, also by non-antagonised cerebellar influence upon those horns, cerebral influence on them being suspended.[16] The *attacks* of laryngismus stridulus in rickety infants are, I have tried to show (*Brain*, April, 1886), lowest level fits caused by very great stimulation of the Respiratory centre by supervenous blood.

[14] It is possible that in these cases there may be (to borrow a term from ophthalmology) a slight degree of weakness, which we may call "insufficiency," of the abductors of the vocal cords.

[15] I have, however, been said to regard carpo-pedal contractions as rudimentary epileptiform convulsions. I admit that I have (Brain, vol. ix., p. 17, April, 1886) written so carelessly that it was naturally inferrible that I thought so. I there wrote "carpo-pedal contractions as well as the severer universal convulsions."

[16] I have suggested that both carpo-pedal contractions and tetany are owing to suspension of cerebral influence; in infants the Rolandic cells for the small muscles of the hand will, I submit, not be well developed, whilst those for the larger muscles moving the hand and fingers will be more developed, hence carpo-pedal contractions. In older people the cells for the small as well as the large muscles will be developed, hence tetany when the function of these cells is annulled. Moreover in infants the pyramidal tract is ill-developed.

SOME REMARKS UPON "INTERNAL DERANGEMENT" OF THE KNEE-JOINT:

BASED UPON 59 CASES IN WHICH OPERATION WAS PERFORMED.

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"INTERNAL derangement of the knee-joint" is a term that was used originally to describe cases having a well-defined series of symptoms, in which the lesion was held to be always damage or displacement of one of the semilunar cartilages. Since the publication of my book on this subject in 1889 I have met with a variety of cases in point which it may now be of use to put forward. We know now that the trouble within the joint is by no means always of the nature mentioned above.

Variety of lesion.—The fact is that a considerable variety of lesions in the knee-joint may all cause the symptoms common to cases known as examples of internal derangement. Moreover, some cases present these symptoms and improve after the joint is opened, although no lesion at all is discerned. This seems just analogous to what happens in certain cases of pain and discomfort in the abdomen in which laparotomy leads to a cure, and presumably the effect upon the two large serous surfaces, the peritoneum and the lining of the knee-joint, when they are exposed is similar and at present equally obscure. In the case of the abdomen such instances are most commonly seen in connexion with tuberculous peritonitis. Possibly similar cases in the knee-joint may represent very early instances of tuberculous affection of the synovial membrane. Or, for want of more definite knowledge, perhaps we may explain some of these cases of symptoms without apparent lesion but with excess of fluid in the joint, in the same way that we veil our ignorance in the matter of hydrocele and say that the proper balance between secretion and absorption is upset in the joints in question. If then we continue to use the term "internal derangement," we must realise that in so describing a case we do not infer that the lesion is necessarily one of a semilunar cartilage. Having now had the opportunity of operating upon a considerable number of such cases, it seemed to me that to put them on record with a brief statement of the actual lesion present in each case might serve a useful purpose by illustrating the various conditions that may produce similar symptoms and demonstrating the consequent difficulty of accurate diagnosis in these cases before the joint is opened. It must not therefore be assumed that I am advocating immediate and indiscriminate opening of the knee-joint in all these cases. The very opposite is, in fact, my aim, one of the main objects of this paper being to lay stress upon what I consider the proper treatment of all these cases if they are seen when the trouble has first arisen.

Early treatment.—Suppose a young man to have received a blow upon, or to have twisted, one of his knees. The joint became fixed for a time, very painful, and rapidly swelled. Perhaps something was felt to move or to lock in the joint. Possibly even something was felt protruding from the joint and on pushing this in the joint could be moved again. The treatment to be pursued is briefly this: splinting for a period varying from one to three weeks, followed by massage, passive movements, and properly selected exercises for the joint. The *rationale* of such treatment is that first of all rest is given so that the damage may heal, the split cartilage join, the displaced one grow firmly fixed again, the torn alar ligament mend, &c., and then the slackness of ligaments and muscles consequent upon the distension and the disuse of the joint is remedied by massage and movement. Thus the supporting structures of the joint being thoroughly restored

A TABLE OF 59 CASES IN WHICH THE KNEE-JOINT WAS OPENED FOR SYMPTOMS OF INTERNAL DERANGEMENT.

Case.	Sex and age.	Date.	History and symptoms.	Description of condition found at the time of operation.	Operation.	Result.
1	M., 33 years.	September, 1887.	At the Great Northern Hospital. The patient had slipped when carrying a heavy load one and a half years previously. The right knee became painful and swollen; never strong since.	The right internal semilunar cartilage freely moveable over the head of the tibia both forwards and backwards.	The cartilage was sutured to the head of the tibia.	The knee perfect two years later.
2	M., 20 years.	September, 1888.	With Dr. Wharton Hood. The patient had injured the right knee while playing football. For one year suffered recurrences of pain and swelling. A moveable body felt on the inner side of the joint.	The right internal semilunar cartilage torn away from the anterior attachment.	The semilunar cartilage was removed. No drainage. Transverse incision.	Pain from excessive synovial secretion. Five years later the knee was perfectly sound.
3	M., 21 years.	October, 1888.	With Dr. Wharton Hood. The patient had knelt on a lump of coal and twisted the left knee which became quickly swollen. After that the knee frequently gave way occasioning sickening pain.	The alar ligament torn away from its attachment to the intercondyloid notch.	The free extremity of the ligament was brought into the wound and fixed. Drainage. Internal incision.	Six months later using the knee in every way without trouble.
4	M., 30 years.	October, 1888.	At the Great Northern Hospital. For years the patient had had trouble with the left knee, thought to be due to "the small bone being out of place." A rounded body palpable on the outer side of the joint above the external tuberosity of the tibia. This sometimes disappeared.	A pendulous mass consisting of enlarged alar ligament found within the joint.	The mass of ligament was removed and the stump fixed to the lower part of the wound. External incision.	One year later had had no trouble since operation.
5	F., 26 years.	January, 1889.	At the Great Northern Hospital. Three months previously the patient had fallen from bed with the right knee under her. Sharp pain on the inner side of the knee and subsequently frequent attacks of pain on the inner side of the joint.	The internal semilunar cartilage detached and loose at the anterior extremity.	The semilunar cartilage was fixed to the head of the tibia. Drainage. Internal incision.	Eight months later perfect movement of the joint.
6	F., 31 years.	March, 1889.	At the Great Northern Hospital. One year previously the patient fell with her left knee under her; pain and swelling of the joint. The joint afterwards always ached and sometimes on rising from kneeling she felt something "jump in the joint" on the inner side. Tender spot on the inner side of the joint.	The internal semilunar cartilage very freely moveable; not detached at either end.	The cartilage was fixed to the head of the tibia. No drainage. Internal incision.	Left cured
7	M., 47 years.	March, 1889.	At the Great Northern Hospital. The patient had felt sudden pain on the outer side of the left knee when getting out of bed three months previously. The knee became fixed and painful. Similar attacks followed frequently. A small flat body palpable over the external tuberosity of the tibia.	No abnormality in the structures of the joint except some roughness of the external cartilage of the femur.	The joint was opened and explored. No drainage. External incision.	Six months later he had no further trouble. Could walk 20 miles.
8	M., 41 years.	August, 1889.	At the Great Northern Hospital. Three years previously the patient had fallen down a hole and had had great pain in the right knee. Two months before admission the pain recurred and caused him to fall. The pain and stiffness became chronic.	The internal semilunar cartilage was loose, but not detached at either end.	The cartilage was fixed to the head of the tibia. No drainage. Internal incision.	Redness round the joint. On Sept. 8th pus was let out from the lower end of the incision. Long convalescence. Discharged cured.
9	M., 22 years.	October, 1889.	At the Great Northern Hospital. The patient twisted the left knee six months before. Could often "start" a lump on the inner side of the joint. This sometimes came when walking and the knee gave way.	The left internal semilunar cartilage was torn away from the head of the tibia anteriorly.	About three-fourths of the internal semilunar cartilage were removed. Drainage. Internal incision.	Discharged "cured" in three weeks. No further history obtained.
10	M., 22 years.	February, 1890.	At the Great Northern Hospital. One and a quarter years previously the patient fell down some steps. The right knee was very swollen, and a few months later "it gave way under him and he felt a bone come out."	The internal semilunar cartilage was torn across the middle of its anterior inner part. This had left the normal semicircular groove and was lying in the antero-posterior position between the head of the tibia and the internal condyle of the femur.	The detached portion of the semilunar cartilage was removed. No drainage. Internal incision.	Discharged cured.

A TABLE OF 59 CASES IN WHICH THE KNEE-JOINT WAS OPENED FOR SYMPTOMS OF INTERNAL DERANGEMENT—*(Continued)*.

Case.	Sex and age.	Date.	History and symptoms.	Description of condition found at the time of operation.	Operation.	Result.
11	M., 20 years.	February, 1890.	At the Great Northern Hospital. Four years previously the patient had slipped and had hurt the left knee. There was pain, which was relieved by something going back when he tried to walk. There were frequent recurrences.	The coronary ligament of internal semilunar cartilage was very relaxed, allowing free movement.	The cartilage was sutured in the head of the tibia.	For several days the dressings were stained with synovial fluid. One month later the stiffness of the joint was broken down under gas. Discharged cured after two months.
12	F., 33 years.	April, 1890.	At the Great Northern Hospital. Two years previously the patient had fallen and had bruised the left knee. There was a gnawing pain in the knee frequently. The movements of the joint were natural, but a body was thought to be felt in joint above the patella on flexion.	No abnormality was found in the joint except some excess of synovial fluid.	The joint was opened and explored.	Rapid convalescence. No further trouble in the knee.
13	M., 39 years.	May, 1890.	At the Great Northern Hospital. Five years previously the patient had "ricked his right knee which had to be pulled in."	The internal semilunar cartilage was very loose and a cystic excrescence was attached to its outer side.	The internal semilunar cartilage was removed.	Discharged cured after six weeks.
14	M., 23 years.	June, 1890.	With Dr. Wharton Hood. Frequent trouble with the right knee since encountering an accident while at football.	A piece of loose cartilage of the size of a bean was found on the external side of joint.	The loose piece of cartilage was removed. No drainage. External incision.	Much effusion requiring early removal of the stitches. The knee gave no further trouble for 10 years.
15	M., 33 years.	January, 1891.	At the Great Northern Hospital. In 1888 "something snapped in the right knee" and the patient had had trouble ever since.	The anterior part of the internal semilunar cartilage was detached and apparently divided into two. The larger portion was lying between the condyles of the femur, the other lying free on the tibia.	Portions of cartilage were removed. Drainage. Internal incision.	Pain for some days after operation. When seen six months later the patient was quite well.
16	M., 21 years.	February, 1891.	With Dr. Wharton Hood. The left knee had been twisted at football. There had been constant trouble with occasional fixation of the joint since.	The internal semilunar cartilage was detached from its base centrally but was fixed at each end.	The internal semilunar cartilage was removed. The joint was washed out. Drainage. Internal incision.	Oozing of synovia for several weeks. Adhesions broken down after six weeks. Perfect condition of the joint giving no trouble at the end of six months.
17	M., 24 years.	July, 1891.	At the Great Northern Hospital. Three years previously the patient had slipped while he was unloading a barrow. There had been frequent attacks of pain in the right knee ever since.	The internal semilunar cartilage was loose and displaced anteriorly.	The semilunar cartilage was removed. Drainage. Internal incision.	Rapid convalescence. No return of symptoms six months later.
18	M., 24 years.	August, 1891.	At the Great Northern Hospital. Two and a quarter years previously the patient had hurt the right knee at football. Soon afterwards the knee suddenly gave way under him and there had been several recurrences later.	The anterior portion of the internal semilunar cartilage was detached and was lying loose.	The anterior two-thirds of the cartilage were removed. Drainage. Internal incision.	After one month the knee was slightly stiff. Six months later this had gone and the knee was perfect.
19	M., 40 years.	September, 1891.	With Dr. Wharton Hood. For 10 years there had been symptoms of a loose cartilage in the right knee.	Loose cartilage was found in the synovial pouch to the outer side of the patella.	Removal of the loose piece of cartilage. No drainage. External incision.	Rapid convalescence. The patient went home in a week. No further trouble two years later.
20	M., 36 years.	September, 1891.	With Dr. Wharton Wood. Injured the knee-joint when rowing 10 years previously. For the last four years there were frequent attacks of pain and swelling.	A small extra piece of cartilage found attached to inner side of the joint just above the internal semilunar cartilage.	A piece of cartilage was removed from the inner side of the joint. Internal incision.	Rapid convalescence. The knee perfectly well five years later.
21	M., 38 years.	October, 1891.	With Mr. B. Carter. Two years previously the patient injured the left knee while hunting. There had been stiffness, pain, and effusion frequently since. Riding and all active exercise were prevented.	The internal semilunar cartilage was very loose but not separated from its attachments.	The cartilage was sutured to the head of the tibia. Drainage.	A few adhesions at the end of a fortnight. Massage and movement for two weeks. When seen three years later the patient had been perfectly well ever since.
22	M., 37 years.	October, 1891.	With Dr. Wharton Hood. For years the patient had suffered from pain in the left knee-joint, the original injury having been received while bowling at cricket.	The internal semilunar cartilage was freely moveable, being torn away from the base but not separated from either extremity.	The cartilage was fixed to the head of the tibia. Drainage.	Excessive secretion of synovia continued for one month. Stiffness of the joint was broken down under an anæsthetic, but it returned in spite of massage and movements. The knee remained stiff.

A TABLE OF 59 CASES IN WHICH THE KNEE-JOINT WAS OPENED FOR SYMPTOMS OF INTERNAL DERANGEMENT—*(Continued)*.

Case.	Sex and age.	Date.	History and symptoms.	Description of condition found at the time of operation.	Operation.	Result.
23	M., 17 years.	November, 1891.	With Dr. M. Prickett. Two years previously the patient injured his left knee at football. Entrance to army was now refused on account of the condition of this joint.	The internal semilunar cartilage was so loose that it could be folded back into the joint; it was not detached from either extremity.	As much as possible of the internal semilunar cartilage was cut away and removed.	After three weeks' an anæsthetic and massage were required for stiffness. A perfect result. The patient was accepted into the army and seven years later he had experienced no trouble.
24	M., 46 years.	December, 1891.	At the Great Northern Hospital. There had been pain and effusion into the left knee-joint at times for years.	There was much thickening of the synovial membrane. An osteophytic deposit in the joint was felt directly the finger was inserted into the inner side of the joint.	The osteophytic growth was removed. Drainage for 10 days. Internal incision.	Two years later movement of the joint was free in every direction. No attacks of pain or swelling.
25	M., 26 years.	December, 1891.	At the Great Northern Hospital. The right knee was swollen and painful off and on for 10 years. It was always weak. There was a small lump on the inner side of the knee.	There was an excess of fluid. The synovial capsule was thickened. There was no loose body. The inner condyle of the femur was rough and was studded with irregular outgrowths. An osteophyte of the size of a large pea was found on the inner side of the tibial head.	The osteophyte was removed. Drainage. Internal incision.	One year later the joint was quite well and was freely moveable.
26	M., 24 years.	May, 1892.	Injured right knee while hunting two years previously.	The internal semilunar cartilage was torn from the coronary attachment; it was not separated at the anterior or posterior extremity.	The cartilage was stitched to the head of the tibia. Drainage.	Rapid recovery.
27	M., 24 years.	May, 1892.	At the Great Northern Hospital. Five years previously the patient had injured the left knee by jumping from a train. There had been constant pain since.	The anterior part of the internal semilunar cartilage was curled on itself and was torn away from the attachment to the internal tuberosity.	The condition of the cartilage was only fully seen on extreme flexion of the joint after opening. Most of the internal semilunar cartilage was removed. Drainage.	There was considerable oozing of synovia for three weeks. Two months later there was some stiffness of the joint.
28	M., 22 years.	October, 1892.	In private practice. Two years previously the patient had injured his left knee at football and there had been repeated attacks of pain since.	The internal semilunar cartilage was freely moveable though not torn away from its attachments. It could be slipped in and out of the joint.	The cartilage sutured to the head of the tibia. Internal incision.	Three years later the joint was perfect.
29	F., 27 years.	October, 1892.	At the Great Northern Hospital. The patient had hurt her right knee at the age of five years. Stiffness of the joint with frequent attacks of pain, swelling, and sometimes locking had been experienced since.	The synovial membrane was thickened and nodular.	The joint was washed out and drained.	The patient left the hospital in 14 days with the wound healed. No further history was obtained.
30	F., 26 years.	February, 1893.	At the Great Northern Hospital. For some years the patient had felt something slipping in the left knee. She was liable to fall.	The internal semilunar cartilage was freely moveable but not unattached.	The cartilage was sutured to the head of the tibia. Internal incision.	The patient left the hospital well after five weeks and has not been heard of since.
31	M., 30 years.	February, 1893.	With Dr. Wharton Hood. For years the patient had been subject to "slipping" and to pain in the left knee.	The internal semilunar cartilage was very moveable, was torn away from the anterior attachment, and was curled up.	The cartilage was removed. Drainage. Internal incision.	Rapid recovery. Three years later the patient was playing tennis with perfect comfort.
32	M., 32 years.	April, 1893.	In private practice. The patient suffered from pain and occasional locking of the right knee for two years.	A small portion of internal semilunar cartilage was torn away from its anterior attachment.	The loose cartilage was removed. No drainage.	Rapid recovery. The stitches were removed on the fifth day. The patient was quite well three years later.
33	M., 32 years.	July, 1893.	At the Great Northern Hospital. Ten years previously the patient had damaged the right knee at football, and there had been pain frequently since.	The internal semilunar cartilage was torn away from its anterior attachment.	The internal semilunar cartilage was removed.	The patient left the hospital well on the nineteenth day.
34	M., 21 years.	November, 1893.	At the Great Northern Hospital. Four years previously the patient had felt a lump at the back of the inner side of the joint. It could be pushed away. There had been severe attacks of pain and swelling.	A free cartilaginous lump slipped out when the joint was opened.	Incision over the swelling at the inner side of the knee.	The patient left the hospital cured after 20 days, and there was no further trouble.
35	M., 18 years.	November, 1893.	With Dr. A. W. K. Picard. One and a half years previously the patient had received a blow on the left knee at cricket. A year later he felt something moving in the joint.	There was a free piece of cartilage.	On opening the joint on the inner side the finger could feel no loose body. The joint was freely washed out and a piece of cartilage came away with the [illegible].	Cured.

A TABLE OF 59 CASES IN WHICH THE KNEE-JOINT WAS OPENED FOR SYMPTOMS OF INTERNAL DERANGEMENT—*(Continued)*.

Case.	Sex and age.	Date.	History and symptoms.	Description of condition found at the time of operation.	Operation.	Result.
36	M., 22 years.	January, 1894.	At the Great Northern Hospital. The patient dislocated the left knee at football one and a quarter years before. There had been frequent pain. A lump was observed on the inner side of the knee-cap.	The internal semilunar cartilage was quite loose, was torn away from the posterior attachment, and was curled up.	The internal semilunar cartilage was removed.	One year later the knee was perfect in all respects.
37	M., 30 years.	January, 1894.	With Dr. Wharton Hood. The patient injured the left knee when rowing six years previously. All the symptoms of loose external cartilage were present.	The external semilunar cartilage was natural. There was a small pedunculated piece of cartilage under the patella on the outer side of the joint.	A loose piece of cartilage was removed.	The stitches were removed on the sixth day when a good deal of synovia escaped. Massage was required to overcome the stiffness. The patient was eventually quite cured.
38	M., 29 years.	March, 1894.	At the Great Northern Hospital. The patient had injured the left knee while skating some years before, and there had been trouble since on the inner side.	The internal semilunar cartilage was split. There was a tongue-like process projecting into the joint.	The internal semilunar cartilage was removed. Drainage for one week.	Rapid recovery. Cure.
39	F., 33 years.	April, 1894.	At the Great Northern Hospital. There was frequent pain in the right knee for years which was worse on the outer side of the joint.	The external semilunar cartilage was found to be chipped.	The protruding portion of cartilage was cut away. No drainage. External incision.	Rapid recovery. Cure.
40	M., 40 years.	June, 1894.	With Dr. Wharton Hood. The patient had fallen while hunting and had struck the right knee seven years previously. There were symptoms of loose cartilage which prevented extension of the leg.	A free loose cartilage was found in the synovial pouch about the patella. There was much nodular outgrowth from the synovial membrane.	The loose cartilage and the synovial thickenings were removed.	Rapid recovery. Much improvement in the range of the joint movement.
41	M., 50 years.	June, 1894.	At the Great Northern Hospital. Three months previously, while removing his stocking, the patient had noticed a small lump come up in front of the right knee. He could not straighten the knee for two days when he forced the lump to the inner side of the knee-cap. It afterwards passed to the outer side, where it stayed.	There was a cartilaginous lump in the synovial pouch to the outer side of the patella.	The cartilaginous lump was removed.	Rapid recovery.
42	M., 37 years.	October, 1894.	With Dr. Wharton Hood. There had been pain and discomfort in the right knee for some years. A loose body was felt wandering about the joint.	A small piece of free loose cartilage was found towards the back of the joint.	The loose body was removed. No drainage. Internal incision.	Rapid recovery. Cure. The patient was well four years later.
43	M., 30 years.	April, 1895.	With Dr. M. Prickett. There had been symptoms of loose cartilage for two years.	The right internal semilunar cartilage was very moveable but was not torn from its attachments.	The cartilage was sutured to the head of the tibia. No drainage.	Rapid recovery. Cure. The patient was well three years later.
44	M., 57 years.	June, 1895.	At the Great Northern Hospital. The patient had knocked the left foot against a stone and had twisted the knee a year previously. He had since felt clicking in the joint.	The cartilaginous surface of the inner condyle of the femur was hypertrophied. The capsule of the joint was very thick where it was opened.	Joint examined. No drainage. Internal incision.	Rapid recovery, with movement of the joint and freedom from the clicking sensation.
45	M., 38 years.	January, 1896.	With Dr. Wharton Hood. There had been symptoms of a loose body in the right knee-joint for some months. Just before the operation the loose body was demonstrated by the patient and was felt by Dr. Wharton Hood and myself.	The condition of the joint structures was normal. The loose body was not discoverable; complete flushing of joint with water failed to wash out the body, which went into the back of the joint.	Free exploration and washing of joint. Internal incision.	Rapid recovery. No further symptoms when the patient was seen three years later.
46	M., —	March, 1896.	With Mr. L. Jones of Manchester. There had been symptoms of a loose body in the right knee for one year.	The right internal semilunar cartilage was torn away from its posterior attachment. It was freely moveable in the joint.	The cartilage was cut away from the interior attachment and was removed. The ligamentous joint structures were very loose.	Rapid recovery. The patient who was seen in 1901 had been well ever since.
47	M., 31 years.	November, 1896.	At St. George's Hospital. Five months previously the patient had fallen and had twisted the left knee, which became fixed for some hours. A small body which was moveable up and down was palpable over the outer edge of the outer condyle of the femur.	The synovial membrane was thick in position of the body felt before operation. No loose body.	The small fold of thickened membrane was removed. No drainage.	Rapid recovery. Symptoms relieved.

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Case.	Sex and age.	Date.	History and symptoms.	Description of condition found at the time of operation.	Operation.	Result.
48	M., 21 years.	April, 1899.	At the Great Northern Hospital. There had been symptoms of a loose body in the right knee for one year.	The internal semilunar cartilage was loose, but not torn away from its attachment. The alar ligament was torn away on the inner side.	The loose alar ligament was removed and the semilunar cartilage was stitched to the head of the tibia.	The patient went out cured in three weeks and was well a year later.
49	M., 24 years.	May, 1897.	With Dr. Wharton Hood. There had been symptoms of loose cartilage in the right knee.	The internal semilunar cartilage was split.	The smaller piece of the split semilunar cartilage was removed. No drainage. Internal incision.	Perfect progress was made, and the patient remained free from symptoms two years later.
50	M., 28 years.	July, 1897.	In private practice. The right knee had been constantly giving pain while riding. Sometimes it swelled up.	The internal semilunar cartilage was found to be loosed from the coronary ligaments, but was attached at each extremity.	The internal semilunar cartilage was removed. Internal incision.	Rapid recovery. No trouble since. The patient was seen in January, 1902.
51	M., 37 years.	July, 1897.	In private practice. There had been pain and weakness in the left knee, which had interfered with military duties.	The internal semilunar cartilage was loose, but was not detached at either end.	The cartilage was sutured to the head of the tibia.	See note at end of table.
52	M., 32 years.	January, 1898.	With Dr. Wharton Hood. There had been symptoms of loose cartilage in the left knee.	There was no looseness of either cartilage, but a roughened condition of the cartilage of internal condyle of femur was present.	The joint was opened and explored. No drainage.	Rapid recovery. No further symptoms.
53	M., 25 years.	March, 1898.	With Dr. Robinson. The condition of the patient's right knee had interfered with his entrance to the army.	The right internal semilunar cartilage was torn from the coronary ligament, but was attached at the extremities.	The loose internal semilunar cartilage was removed. Internal incision.	Rapid recovery. The patient entered the army, and up to December, 1901, had not been troubled with the knee.
54	M., 27 years.	May, 1899.	In private practice. There had been symptoms of internal derangement for six months.	The internal semilunar cartilage of the right knee was split and was very moveable.	Cartilage removed. Internal incision.	Rapid recovery. Cure. The patient was seen two years later.
55	M., 35 years.	May, 1899.	At St. George's Hospital. Symptoms of internal derangement had been manifest.	The interior of the joint and ligaments was normal.	The joint was opened and explored. The cartilage was not removed.	Discharged cured.
56	M., 28 years.	June, 1900.	In private practice. There had been pain and frequent attacks of swelling in the right knee.	The internal semilunar cartilage was torn away from the posterior attachment.	The cartilage was removed. No drainage. Internal incision.	Rapid recovery. The patient has been well since. He was seen in December, 1901.
57	M., 33 years.	August, 1900.	At St. George's Hospital. Attacks of pain and stiffness in the right knee on the outer side had interfered with work.	The cartilages were normal. There was an excessive fringe of synovial membrane.	The excessive synovial fringe was removed. No drainage. External incision.	Rapid recovery. The patient has not been heard of since.
58	M., 33 years.	February, 1901.	In private practice. Symptoms of internal derangement had prevailed for three months in the right knee.	The internal semilunar cartilage was very moveable but was not torn away from its extreme attachment.	The cartilage was removed. No drainage. Internal incision.	Rapid recovery. Cure.
59	M., 26 years.	November, 1901.	In private practice. The right knee had been first damaged at football three years previously. Since then it had been constantly giving way on severe exercise.	Directly the joint was opened the loose body jumped into the wound. No other abnormality was found.	The loose body was removed. No drainage. Internal incision.	Rapid recovery. There has been no return of the symptoms up to the present date though a hard day's shooting has been indulged in.

CASE 51.—There was pain in the joint from the day after the operation. The temperature was never above 100° F., but the condition of the joint was unsatisfactory. There were a pulpy condition of the synovial membrane and cellulitis superficially. The stitches were removed and the joint was washed out. There were always pain and discharge of synovial fluid. The knee remained swollen and painful and was opened to let out the discharge on two occasions. There was not much discharge of synovia, but there was constant pain. Finally the joint quieted down but it remained absolutely ankylosed.

SUMMARY.

	Removed.	Fixed.	Total.
Operations on internal semilunar cartilage	22	12	34
,, ,, external ,, ,,	1	—	1
,, ,, loose cartilages	12	—	12
,, ,, ligamenta alaria	1	1	2
,, ,, chronic traumatic or rheumatoid arthritis	—	—	7
Exploration of joint and nothing found	—	—	3

to their natural strength, when the joint is again fully used in the ordinary way there will be no tendency to a recurrence of the accident. Such a line of treatment is that which has been followed for years with the greatest success by Dr. Wharton P. Hood. In a certain percentage of cases it will fail and the trouble will recur. These must be operated upon. Similarly chronic cases that have already had numerous attacks when first seen require operation. Those cases, also, in which a quite loose body can be felt to move to widely different positions in the joint and those in which a loosened cartilage protrudes from the joint will not improve without operation. In all other cases such a course of treatment as has been sketched should be thoroughly tried before the question of operation is considered.

The operation.—A few particulars concerning the operation itself may be mentioned. A vertical incision of about three inches, one inch to the inner side of the patella and going down to an inch below the head of the tibia is the incision which I choose for opening the joint, unless, of course, there is special indication, as the presence of a foreign body, for incising at some other situation. An advantage over the transverse incision is that by the vertical cut, the extension of the vasti on to the tibia, an important supporting structure is not divided; moreover, the vertical incision is easily prolonged upwards when this is necessary for examination of the large synovial pouch about the patella. Care must be taken to clip and to tie every bleeding point, and the joint is to be literally squeezed dry before it is closed. The joint should not be washed out with antiseptics and no drainage should be employed. One exception to the rule of not washing out is presented by such cases as Case 35. Here a loose body, the presence of which had been determined with certainty before the joint was opened, could not afterwards be found in spite of the freest digital searching. On flushing the joint with boiled water the body literally floated out. Such a manœuvre may occasionally be necessary and has led to no harm. In another case (Case 45) even this proceeding failed, to discover a loose body about the presence of which there was absolutely no doubt. It became fixed presumably in the posterior part of the joint behind the crucial ligaments and gave no further trouble. The course of this case to a perfect cure seems to prove conclusively that rest, exercise, and massage may lead to the remedying of a condition within the knee-joint which might well have seemed incurable except by operation. It is, however, possible that the body became fixed owing to influences which would not have come into play had the joint not been opened.

It is hardly necessary to insist upon the strictest asepsis, which must, of course, be observed, but I cannot agree with Mr A. E. Barker that the finger should not be used within the joint. Without such use I cannot believe it possible in some cases properly to estimate or to remedy the fault that may be present. It is necessary in some cases to examine with the finger every part of the joint that can be reached. Even then a small loose body may escape detection as in Case 45

My experience favours removing loose semilunar cartilages rather than fixing them, and the same applies to torn or hypertrophied alar ligaments or local hypertrophy of synovial membrane.

In closing the wound the sutures are to be passed so as to include the cut synovial membrane.

After-treatment.—The splints are to be taken off within a week. Passive movements are begun as soon as the skin wound is healed, and these are combined with massage. If in spite of exercises and massage there appears some stiffness of the joint it must be freely moved under an anæsthetic and then daily massaged and freely moved to prevent stiffness from reappearing.

Points concerning diagnosis.—The 59 cases here tabulated, all of which presented either the characteristic symptoms with locking of the joint, or else weakness with recurrence of pain and swelling, which is often the only evidence of damaged semilunars, illustrate the following conditions: (1) semilunar cartilage, internal or external, split, loosened or displaced, torn from either or both extremities or from coronary ligaments; (2) loose bodies—the body may be quite free or may be attached by a pedicle; (3) a torn or hypertrophied alar ligament or hypertrophied fringe of synovial membrane; (4) rheumatoid arthritis—roughened cartilage, thickened synovial membrane, and osteophytic outgrowth; and (5) no obvious derangement. There are some points which help us in differentiating between these conditions, although it will happen not seldom that symptoms most strongly suggestive of one lesion will prove to be due to another. Thus Case 59 was apparently a typical example of semilunar damage, yet the lesion proved to be a perfectly loose body and the semilunars were natural.

In the cases of damage to a semilunar cartilage there are generally these features: (1) distinct history of injury originating the trouble; (2) a well-defined site of pain on the inner or outer side of the knee according to the cartilage damaged; (3) no foreign body palpable; and (4) no creaking in the joint. These same features also characterise generally cases in which the lesion affects an alar ligament or consists in localised hypertrophy of synovial membrane.

In the cases where a loose body is present the symptoms, again, may be exactly similar to those caused by semilunar damage (Case 59). Sometimes, however, the body will be able to be moved into widely separated portions of the joint (Case 45) and felt in its different situations. Similarly a very loose semilunar cartilage may sometimes be diagnosed with certainty through its being protruded at the side of the joint. Such a cartilage, however, may be most confusingly imitated by an excrescence due to rheumatoid arthritis.

Results.—Viewed generally these cases show that operation for internal derangement of the knee-joint is in most cases highly satisfactory. There are generally quick recovery and no recurrence of the trouble. In one case after several years of freedom another operation was required and a large number of loose bodies were removed from the joint. I am, however, very anxious not to minimise the gravity of the operation, which I hold to be considerable, and would lay stress upon Cases 22 and 51, which illustrate failure such as is probably inseparable from a certain proportion of all serious operations. Even short of the unhappy event of permanent stiffness, considerable trouble may be caused in convalescence by profuse secretion of synovia (Case 37) and by a tendency to stiffness of the joint (Case 23). Such cases cause great anxiety and require the most early careful and persistent treatment if a perfect joint is to be finally secured.

Grosvenor-street, W.

A CASE OF ACUTE MYASTHENIA GRAVIS.

BY C. A. HINGSTON, M.D., B.SC. LOND.,
CONSULTING PHYSICIAN TO THE PLYMOUTH PUBLIC DISPENSARY;
AND
W. H. B. STODDART, M.D., M.R.C.P. LOND.,
ASSISTANT MEDICAL OFFICER TO BETHLEM AND BRIDEWELL ROYAL HOSPITALS.

WE have thought it desirable to place the following case on record, partly on account of the rarity of the condition and partly on account of the fact that our case presented some unusual features.

The patient, aged 71 years, was a contractor of Plymouth. He had lived a life of considerable mental and physical activity for about 30 years and during this time his health was above the average. At the age of 60 years he relinquished the greater part of his work; he became easily excited and fatigued and his business capacity obviously lessened. At the age of 63 years he began to suffer severe neuralgic pains in various parts of his body and limbs, for which there was no apparent cause. Finally, however, these pains became limited to the left leg and were sufficiently severe to confine him to bed for many weeks. At this time the urine was found to be of high specific gravity and to contain a considerable quantity of sugar. The glycosuria never quite disappeared, but it became so inconsiderable as to be scarcely appreciable by the ordinary tests.

About 12 months before his death albuminuria set in and continued to the end. During the 12 months prior to his death he steadily lost energy and strength; but no local symptoms presented themselves till seven weeks before his death. He then relaxed his diabetic diet and his final illness appeared to date from this time. He developed a gradually increasing general weakness without malaise. He became exhausted during the process of dressing, the distance which he was able to walk grew daily shorter, and slight bilateral ptosis developed so that he was unable to read for any length of

time. As he did not improve, for the sake of a holiday, he paid a visit to his daughter in Essex. Shortly after his arrival he developed difficulty in swallowing and soon had to limit his food to semi-solids and finally liquids. The latter, however, frequently regurgitated through the nose.

After he had been in Essex about three days he was seen by one of us and again carefully examined. He was then well nourished and when sitting down looked in good health except for his ptosis. He complained of weakness; but on examination it was found that he could fairly well perform any movement of the limbs or trunk. Any such movement, however, was almost immediately exhausted; for instance, he could rise from his chair fairly briskly for a man of his age; a second attempt to do this involved great effort and a third attempt was quite unsuccessful. There was no muscular wasting and the electrical irritability of the muscles was not examined. There was no loss of sensation in any part of the body, nor was there any incoördination, tremor, or involuntary movement of any kind. The abdominal and plantar reflexes were normal. The knee-jerk was at first somewhat exaggerated but became partially exhausted on repeated stimulation. As far as could be determined, however, the knee-jerk could not be absolutely abolished. There was no clonus. There was no ocular palsy, but some nystagmoid jerking occurred on lateral deviation of the eyes, which jerking increased if the lateral deviation was prolonged. There was no history of diplopia. Bilateral ptosis was present to a degree sufficient about half to cover the pupils, but the ptosis increased if the patient attempted to read. The pupils were equal and the pupillary and conjunctival reflexes were normal. There appeared to be no weakness of the muscles of mastication or of the muscles of the face. The patient's voice was fairly strong after a rest of half an hour or so, but aphonia developed after a few minutes' conversation. He was unable to swallow solid food. The pharyngeal reflex could not be obtained. Liquids regurgitated through the nose towards the end of a meal. The heart and lungs were normal except that the aortic second sound was louder than natural. His arteries were normal for his age. The patient had full control of his rectum and bladder. At this time the urine contained both sugar and albumin in moderate amounts. The patient rapidly grew worse and returned to Plymouth on June 27th. On the 29th difficulty of swallowing became more pronounced and it increased daily until his death on July 13th.

No necropsy was obtained in this case, but there appears to be little doubt that our patient suffered from myasthenia gravis or asthenic bulbar paralysis. The unusual features to which we would draw attention are the patient's age, the exceptionally acute course of the disease, and the association with diabetes. From previously reported cases (about 70 in number) it would appear that the disease belongs to the third decade of life, and so far as we have seen in the literature no case is on record of such a patient who has reached the seventh decade. Erb's first case—the oldest at present on record—was 55 years of age.

The present case ran an exceptionally acute course. The only undoubted case that has run a more acute course is that recorded by Widal and Marinesco; their patient lived only 14 days after the onset. The association with diabetes in our case appears to have been somewhat intimate since the myasthenia set in almost as soon as the patient relaxed his diabetic diet. So far as this observation goes it is in favour of the prevalent view that myasthenia gravis is due to the effect of some toxic agent upon the peripheral neurons.

MILK OR WHEY IN ENTERIC FEVER?

BY ARTHUR TREGELLES PRIDHAM, M.B. LOND.,
HOUSE PHYSICIAN AT ST. BARTHOLOMEW'S HOSPITAL.

IN THE LANCET of Nov. 2nd, 1901, p. 1182, Mr. Prideaux G. Selby of Teynham, Kent, published a paper concerning the treatment of enteric fever by whey instead of milk as a taple food, his death-rate for 73 cases being 2·7 per cent. Since that time Dr. S. J. Gee of St. Bartholomew's Hospital has treated four cases entirely, and one case partially, by this method. All did well, but one case perhaps deserves notice on account of its severity and the favourable issue under what is more or less a new departure in treatment, though I believe that Dr. Norman Moore has for some time past treated his cases of enteric fever chiefly on whey. The patient in question was a man, aged 23 years, a fish-porter, and previously to this illness he had been in good health. On Nov. 3rd, 1901, he caught cold and suffered from headache, and on the 10th he took to his bed. On the 16th he was admitted into St. Bartholomew's Hospital, with the history that for the previous week he had been feverish and his bowels constipated. On admission his temperature was 100·5° F.; his pulse was 84 per minute, soft and regular; his radial artery was thickened; his urine was of specific gravity 1025, had an acid reaction, and presented no abnormality; and his tongue was dry and brown. Examination of his heart and lungs showed nothing abnormal. His abdomen was not distended or tender; his spleen could just be felt. On the 17th his blood gave a well-marked Widal's reaction. On Dec. 2nd there were many typical enteric fever spots on his abdomen and chest. His evening temperature was usually from 103° to 104°, and his pulse was from 110 to 120 per minute and very soft; he was sponged night and morning. He was taking four ounces of brandy and a small quantity (about half a pint) of beef essence; otherwise he had nothing but whey, of which he consumed from three to four pints in the 24 hours. On Dec. 4th there were some indications of heart failure and the first sound became faint. The patient therefore began to take four-minim doses of liquor strychniæ, given at first three times a day and afterwards every six hours. On the 6th his pulse was very soft and dicrotic and he had occasional shivering fits. His bowels were open about three times daily; on the 6th the motions were stained with blood, and he passed one very large black slough measuring one inch by half an inch, together with several small sloughs; they were of considerable thickness, showing the ulceration to be very deep. His abdomen presented no distension and was natural in appearance. On the 9th several large blood-stained sloughs were passed. On the 10th the man was very ill and the brandy was gradually increased till he now took eight ounces. About 3 A.M. on the 12th, which was approximately the fortieth day of the disease, there was copious hæmorrhage from the bowel amounting to at least one and a half pints; the man was very ill, but he quieted down with morphia given hypodermically. On the 13th the patient was so collapsed and blanched that Dr. Gee gave an unfavourable prognosis. There was, however, no delirium or distension of the abdomen. On the 16th the patient was very restless, he passed urine frequently, and was with great difficulty made to sleep by hypodermic injections of morphia, hot sponging, and paraldehyde. On the 17th his urine was alkaline and contained much pus and the bacillus typhosus; he was given seven grains of urotropine three times a day. On the 18th he was better and the urine was clearing. On the 19th there was an obvious improvement. His bowels were opened twice, the motions containing no blood or sloughs. His tongue was cleaner and for the first time since the hæmorrhage he had strength to put it out when asked to do so. On the 20th the man was better. His temperature was intermitting well and his urine contained no pus. On the 21st (the forty-ninth day of the disease) his temperature was normal, his subsequent convalescence was uninterrupted, and the brandy was gradually reduced. He continued to take nothing but whey until the 31st, when he began to take milk. He was very emaciated, but not more so than might have been expected from the severity of the disease.

The most noticeable points in the case were the following. 1. Distension of the abdomen was entirely absent. Another patient with enteric fever who was taking half a pint of milk with his whey showed more distension on the third day after admission than this patient did at any time throughout his illness. From the size and thickness of the sloughs I am convinced that had the patient's intestines been distended with gas when he passed these sloughs perforation must have followed. 2. There was an absence of delirium almost throughout the illness, except for a short time on one or two occasions. 3. There was an absence of serious diarrhœa in spite of the severe ulceration; the bowels were loose but never became troublesome. It is probable, as suggested by Mr. Selby, that these three symptoms are often much aggravated by, or due to, toxins formed by decomposing milk curd. 4. With regard to the state of the mouth and tongue it did not correspond to Mr. Selby's experience and differed little from than of an enteric fever patient treated with milk, being dry and cracked and difficult to keep clean.

St. Bartholomew's Hospital, E.C.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

DESQUAMATION.

BY J. REID, M.A., M.D., C.M. ABERD.

THE following notes may be of interest and they may lead to more searching inquiry on the subject of contagious diseases.

CASE 1.—The patient, a child, aged nine years, when seen on Jan. 8th had a typical measles rash with Filatow's and Koplik's spots. Between the 17th and the 27th a brawny desquamation over the body was twice repeated with peeling of the skin of the hand and feet in large pieces.

CASE 2.—The patient, a woman, 35 years of age, was suffering from pneumonia and subacute rheumatism when seen on Dec. 29th. From Jan. 16th to the 22nd there was tonsillitis and from the 23rd to Feb. 3rd there were present a brawny desquamation and free peeling of the hands and feet. There was never any rash. The rheumatism affected the joints, the heart (transitorily), and various muscles. There was neuralgia of the head. None of the patient's children were affected; one had slight quinsy.

CASE 3.—In the case of this patient, whose age was 12 years, tænia and ulcer of the leg were present. The head of the tænia was not found. An oleaginous preparation was applied to the ulcer on the leg. On Feb. 8th there was measles, with Filatow's and Koplik's spots, which was treated with carbonate of ammonia. On the 9th there was perspiration in quantity under the oil at the site of the ulcer; the rest of the body was dry. On the 14th there were lichen urticatus on the body and the back and erythema papulatum on the legs. The itching from these was unbearable. After the administration of a stomach mixture no trace of the rashes or itching remained next day. On the 19th a brawny desquamation on the body and peeling of the hands and feet were the presenting conditions and on the 27th erythema on the chest and thighs was noticeable as well as some lichen on the back, but there was no itching and the tongue was clean. There was no rash next day, but the peeling was nearly completed.

CASE 4.—In the case of this patient, a child, aged five years, who was seen on Jan. 11th, a bruit and rheumatism which had been left after an attack of scarlet fever six months previously, were present. On Feb. 15th there was measles, with Filatow's and Koplik's spots, and on the 22nd a brawny desquamation commenced and there was afterwards extensive peeling of the fingers, &c. A brother of this patient, aged one year, had on this date an irregular, slight measles rash, with Filatow's and Koplik's spots, not followed by desquamation; and no trace of rheumatism exists.

Other cases of measles had no desquamation and in all cases of desquamation observed there was evidence of rheumatism in some of the joints, the severity of the case bearing no relation to subsequent desquamation. Mixed affections in connexion with exanthemata have been little studied and out-of-the-way nerve lesions, &c., have been attributed to the fever. How far the method of placing certain results among the effects of a fever plus a diathesis or latent disease deserves attention must rest on careful observation. I have never seen desquamation follow measles in the tuberculous.

Bristol.

RUPTURE OF THE COVERINGS OF AN UMBILICAL HERNIA WITH EXTERNAL PROTRUSION OF THE INTESTINE.

BY FREDERICK T. TRAVERS, B.S. LOND., F.R.C.S. EDIN.,
SURGEON TO THE WEST KENT GENERAL HOSPITAL.

THE following case from its unusual nature may be worth recording. The patient was a woman, aged 60 years, who had a small umbilical hernia and had suffered for some years from winter cough. On Feb. 20th, at 1 P.M., she had a rather more severe fit of coughing than usual and felt something give way in the abdomen. She was seen at 1.30 P.M. by Dr. F. Voller who found that a mass of intestine was protruding through an aperture in the side of the hernial swelling. Seeing that it was impossible to reduce it without operation, and that this could not be carried out satisfactorily at her cottage, he wrapped the extruded bowel in folds of warm cyanide gauze and, applying a temporary support by bandages, ordered her to be removed immediately to the West Kent General Hospital at Maidstone. This was a matter of some difficulty, as the patient weighed over 16 stones. On arrival at the hospital she was suffering considerably from shock. Ether was at once administered, and after cleansing the abdominal wall the gauze wrapping was removed and about six feet of small intestine were found to be protruding from a rent one and a half inches across in the side of an umbilical hernia. The gut was irrigated with warm chinosol solution (1 in 2500) and was wrapped in warm sterilised towels. The wound in the skin was enlarged till the bowel could be reduced. A portion of omentum which was adherent to the interior of the sac was ligatured and cut away and the walls of the sac were freed and sutured. The sides of the opening in the fascia were laced together by a continuous suture, and after cutting out the portion of skin around the rent the wound was closed.

After the operation, which occupied half an hour, the patient's condition appeared to be better; she soon, however, began to run down again and she died from cardiac failure 38 hours later. There had been no previous ulceration over the point of rupture and the skin was not stretched and thinned out. The sac and skin presented a considerable thickness and had torn lineally without any previous warning. Doubtless the patient's extreme obesity and the accompanying loss of elasticity of the skin accounted for the occurrence of the accident.

Maidstone.

GANGRENE OF THE SKIN DURING AN ATTACK OF ENTERIC FEVER.

BY ARTHUR S. BARROW, M.R.C.S. ENG., L.R.C.P. LOND.

A MARRIED woman was attended by me in May, 1901, during an attack of enteric fever. On the twenty-sixth day of the illness there was severe hæmorrhage from the bowel which was repeated 12 hours later and the patient then passed into a typhoid state from which it was difficult to rouse her. Two days after the hæmorrhage a small bulla appeared over the left outer malleolus and a large bulla over the right buttock; in 24 hours the bullæ shrivelled up leaving a black patch beneath devoid of sensation. The site of the bulla over the malleolus formed a slough which I removed leaving a punctiform ulcer one inch long by half an inch wide, exposing the subcutaneous tissue. The site of the bulla over the buttock formed a slough more gradually, but in 10 days from the appearance of the bulla I removed a large slough which left a deep excavated ulcer with sharply punched-out edges one and a quarter inches deep, three inches long, and two inches wide. The ulcer over the malleolus speedily healed, although that over the buttock took longer, but with the patient keeping the prone position a good result was obtained. My patient never had a "bed-sore" and was very carefully nursed by a trained nurse.

Indwe, Cape Colony.

WORKHOUSE INFIRMARY NURSING ASSOCIATION.—This association, which was founded in 1879 with the object of raising the standard of public opinion on the whole question of workhouse nursing, of securing the appointment of trained ladies as matrons in all separate infirmaries, and of supplying nurses to workhouse infirmaries in London and the provinces, has during the 22 years that it has been in existence received 1391 applications for nurses. The number of nurses appointed has been 844. On March 10th, in the Examination Hall, Victoria Embankment, London, W.C., Miss Gibson, matron of the Birmingham Infirmary, read a paper entitled, "The Scarcity of Nurses in Country Workhouses, its Cause and Cure."

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

COUNTY ANTRIM INFIRMARY, LISBURN.

TWO CASES OF SPINA BIFIDA TREATED SUCCESSFULLY—THE FIRST BY INJECTION OF MORTON'S FLUID AND THE SECOND BY EXCISION.

(Under the care of Mr. G. L. ST. GEORGE.)

THE treatment of spina bifida by the injection of a small quantity of solution of iodine in glycerine was first practised by Morton, and its use was much extended by the strong recommendation which it received from the committee of the Clinical Society of London which was appointed in 1885 to consider the treatment of this malformation.[1] From our knowledge of the pathology we are justified in thinking that injections of iodine and glycerine can only effect a cure in a pure meningocele, and that it can do no good in a meningo-myelocele or in a syringomyelocele. Since, however, it is rarely possible to decide with any certainty that no part of the spinal cord or its nerves is included within the sac, there is nearly always some risk in employing these injections, even if we do not consider the danger arising from a possible infection through the puncture. In consequence of this difficulty of diagnosis many surgeons at the present day are inclined to advise excision of the sac.[2] In this operation the two chief dangers are sepsis and the sudden escape of the cerebro-spinal fluid which may lead to grave disturbance of the circulation in the nerve-centres. The former danger may be guarded against by scrupulous care and for the latter the surgeon should avoid any rapid evacuation of the fluid. The operation of excision is applicable even in cases in which spinal nerves are contained in the sac, for they may be returned within the bony canal,[3] and such an aseptic operation must surely be safer than the indiscriminate injection of an irritant fluid. We congratulate Mr. St. George on his two successful cases.

CASE 1.—A female child, aged seven days, was admitted to the County Antrim Infirmary on Oct. 5th, 1901. She had a spina bifida of the fourth and fifth lumbar vertebræ. The tumour was of about the size of a small orange and was covered for about two-thirds by normal skin, but ended for the upper third in a membrane with a distinct margin. This membrane was beginning to show signs of ulceration. The tumour was markedly distended when the child cried or struggled, but there was no paralysis of the lower limbs or distension of the fontanelles. On Oct. 7th, the tumour having been thoroughly cleansed and made aseptic with sublimate lotion (1 in 2000) and the child having been anæsthetised with chloroform, Mr. St. George punctured the base of the tumour with a fine trocar, and after allowing about two-thirds of the contents to escape injected slowly a drachm of Morton's fluid through the cannula. On withdrawing the cannula the opening was firmly grasped and painted over with a solution of iodoform in flexile collodion in order to close the orifice. The whole tumour sac having been painted with the collodion and iodoform it was covered with iodoform gauze and absorbent wool. The child seemed to suffer greatly from shock after the operation. The temperature rose to 103° F. and remained high for some days. On Oct. 21st the tumour was again tapped and some fluid having been drawn off the sac was injected as before and painted with the iodoform and collodion. The temperature did not rise on this occasion to any appreciable extent, nor did the child seem to suffer so much from shock, but there were great wasting of the limbs and constipation. She was therefore put on cod-liver oil and malt (Kepler) and Mellin's food. Under this form of food she rapidly improved in weight and appearance. The walls of the sac were now becoming shrivelled and more and more consolidated, except in the centre where a small piece of membrane still remained. On Dec. 21st, having again made the part aseptic, Mr. St. George dissected this piece carefully round expecting to find it communicating with the sac itself, but it did not do so; he therefore closed the flaps of skin over the opening so as to make a firm covering. The child did well and made a rapid recovery, being shown at the meeting of the British Medical Association (North of Ireland Branch) in Belfast on Jan. 23rd, 1902, and was discharged from hospital on Feb. 7th, only a fine cicatrix remaining. Unfortunately, no photograph was taken of this case before operation.

CASE 2.—A male child, aged three weeks, was admitted to the County Antrim Infirmary on Oct. 26th, 1901, suffering from a spina bifida of the seventh cervical vertebra. In this case the tumour was covered by skin completely. As the child was suffering from boils the operation was deferred for some weeks to allow of there being no chance of septic infection, as there was no urgency from the state of the

FIG. 1.

Before operation.

FIG. 2.

After operation.

[1] Transactions of the Clinical Society of London, vol. xviii., p. 383.
[2] W. H. A. Jacobson: The Operations of Surgery, third edition, p. 1290.
[3] Mayo Robson: Annals of Surgery, 1895, vol. ii., p. 82.

tumour. On Nov. 10th, the child being in good health, the tumour and surrounding skin were thoroughly cleansed and made aseptic and the child was anæsthetised. Mr. St. George made two horizontal flaps of skin, and having carefully raised them from the tumour down to the base, the tumour was punctured and fluid was allowed to escape. The base of the tumour was grasped with forceps and ligatured with catgut and the tumour was cut off. The skin flaps were then laid down and closed by a continuous suture of silkworm gut and all was dressed with iodoform and collodion and gauze. The child showed no signs of shock after the operation. The temperature rose on the 19th to 100·2° F. but never again above normal. The wound healed rapidly and the child was discharged on Dec. 16th, and was shown with the previous case at the meeting of the British Medical Association (North of Ireland Branch) on Jan. 23rd, 1902. The accompanying illustrations show the case before and after operation.

Remarks by Mr. ST. GEORGE.—The treatment of cases by Morton's fluid, though in the first case successful, is fraught with great danger and should be avoided if it be possible to operate by excision. The injection of an irritating fluid into a sac communicating with the spinal canal must lead to serious consequences as evinced by the shock, &c; whereas in excision with proper aseptic precautions the position of nerves can be carefully ascertained beforehand and avoided. However, it is not often that two cases showing the different modes of treatment can be so opportunely contrasted and the results compared.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Clinical and Experimental Observations on the Regeneration of Peripheral Nerves.

A MEETING of this society was held on March 11th, Mr. ALFRED WILLETT, the President, being in the chair.

Professor J. N. LANGLEY (Cambridge) resumed the discussion on the Regeneration of Peripheral Nerves. He remarked that the first and the principal point raised by Mr. C. A. Ballance and Dr. J. Purves Stewart in their opening paper was whether a nerve severed from its central connexions could become regenerated and by what means this was accomplished. In general he agreed that the distal cut end of a nerve could regenerate almost completely by itself, and he mentioned experiments and observations in support. It was, however, very difficult to distinguish for certain non-medullated fibres from strands of connective tissue, and thus unsuspected non-medullated fibres might possibly exist between the central and peripheral ends undiscoverable by the microscope. Histological observations were thus vitiated to a large extent; but by other experiments he had come to the conclusion just mentioned. The degree of repair might be different in animals and in different kinds of nerves, and probably the peripheral end might not recover to the same extent as the central end. As regards the actual manner in which regeneration took place, the view adopted by Mr. Ballance and Dr. Stewart was a new view, but it seemed to him to be perfectly reasonable. He was not, however, quite convinced about the neuroblastic formation of the nerve-fibre. It was difficult in cut sections to follow nerve fibrils. It was necessary to tease specimens if it were desired to follow up the fibrils. The Golgi stain was erratic and osmic stains were preferable to the Weigert stain and the Golgi method. The essential point was that a peripheral nerve could regenerate apart from its central connexions. One point not cleared up by the opening paper was the rapid return of sensation in some cases of secondary suture. This might occur in from one hour to 24 hours, and if recovery of function did not correspond with structural regeneration how was it to be explained? He suggested as a hypothesis that the division of one or more nerve fibrils might happen just between two neuroblasts and thus the two in contact end to end might escape injury and being in anatomical continuity might transmit sensory impulses. In the surgical operations for the repair of a divided facial nerve it was usual partially to divide the spinal accessory nerve and to graft the facial on to the central portion of the spinal accessory. But he would suggest that it would be better to cut the spinal accessory quite across, to split it, and to unite one portion to the facial and the other portion to the peripheral cut trunk of the spinal accessory. He paid a high compliment to the thoroughness of the opening paper.

Dr. F. W. MOTT also agreed that nerves could regenerate from the periphery. In his own experiments he had cut both sciatic nerves so that the animal was completely paralysed and at rest. Now, the deposition of myelin depended largely on stimuli, such as muscular movement. This stimulus was therefore wanting in his own observations. He had used the method of teasing to trace the nerve fibrils in his specimens, and this was the only successful method. He illustrated his remarks by lantern slides, showing mitosis of the neurilemma cells and the absorption of fat. He discussed the various methods of staining and could not help regarding the Golgi method as a very unreliable one. The passage of a stimulus was, he believed, a very important one in the regeneration. He doubted if the authors of the paper had sufficiently tested the conductivity of the nerves which they had divided above and below the points of section with faradism. The experiments of Dr. Robert Kennedy of Glasgow had made it clear that regeneration of nerves took place from the periphery and this was confirmed by the researches of Mr. Ballance and Dr. Stewart.

A contribution from Mr. A. W. MAYO ROBSON was read, in his unavoidable absence, by the Secretary. Mr. Mayo Robson reminded the society that at the first operation of nerve-grafting performed by himself in 1888 sensation to all the parts supplied by the divided median nerve was good when tested on the day following the operation and remained so, though the motor functions were not restored until later. He suggested that the immediate re-establishment of anatomical continuity of the nerve kept up physiological activity and so prevented degeneration of the distal segment. He also referred to other cases.

Dr. W. ALDREN TURNER wished to comment on that portion of the opening paper bearing on the neural theory and asked, Must that theory be discarded? He believed not. There were too many data in support of it. There was not only Wallerian degeneration on the peripheral side and in the cut end of the central segment, but there were also changes which took place in the whole nerve trunk and in the spinal cord. These changes had not received sufficient attention in the paper of Mr. Ballance and Dr. Stewart. These observers stated: "New fibres never reach maturity until suturing is performed." This very statement went to support the neural theory. Turning to the clinical aspect of the subject, severe destruction of a nerve might occur with very little loss of sensation. Probably a very few fibrils could supply a very large area of skin. Motion was very late in returning after secondary suture. Evidently the whole motor neuron was affected by section and not a small part of it.

Mr. RICKMAN J. GODLEE, adverting to the surgical aspect, said that it was well known how quickly sensation was restored. He also referred to the fact that pressure on a nerve produced disturbed function, as when lying on one's arm or leg. Esmarch's bandage might produce similar effects, lasting weeks or months. What were the changes which took place? Possibly it was an anæmia followed by reactionary congestion. For spasmodic tick he had in a good number of cases crushed the nerve by a pair of forceps, producing temporary paralysis. The nerve ultimately and completely recovered and the result had often been very satisfactory.

Dr. F. E. BATTEN said that while investigating the condition of the muscle-spindle after section of the nerve he had had the opportunity of examining the finer nerves at various periods after division of the sciatic. The operations had been performed by Dr. J. S. Risien Russell and the nerve had been stitched up so as to defeat any possible chance of reunion. The nerves had been examined in the gastrocnemius muscle by the Marchi and Weigert-Pal methods at periods of three weeks, two months, and three months after section. At three weeks the degeneration was marked, at two months there were still evidences of degeneration, and at three months also evidence of degeneration was still present, but at no period was there any evidence of regeneration of the nerve. Now it had been stated by Mr. Ballance and Dr. Stewart that regeneration occurred in the stump of the nerve distal to the section. It would be of extreme

interest to find out how far down the nerve this regeneration extended. Certain it was that three months after section of the nerve it did not reach to the finer nerve branches in the muscle. If their view was correct that the nerve was regenerated by the neurilemma cells then it was difficult to see why regeneration should not take place in the finer nerves within the muscle just as it was stated to do in the trunk of the nerve. He would therefore like to ask the authors the following question, How far below the point of section had they traced the regeneration of fibres in cases in which the nerve had been completely divided?

Mr. BALLANCE, in replying, referred to a paper published in 1884 by Dr. C. S. Sherrington who had observed that regeneration took place on the peripheral side of the division of a divided nerve. Referring to the return of sensation after division he had often noticed that there was a preliminary return immediately after the operation, then it faded away, and then at the end of a week or 10 days it returned again. Referring to the operation for restoring the facial nerve the procedure suggested by Professor Langley corresponded with Faure's operation. But the best method was that of Manasse which consisted in suturing the facial into an opening of the sheath of the spinal accessory nerve without injury to the actual nerve fibres of the latter.

Dr. STEWART, in replying, agreed that the Golgi method was apt to be erratic, but when successful it gave all the information which they desired. The nerves had been examined as far as seven inches below the lesion and they had found identically the same changes. The essential fact of their paper was that regeneration occurred in a nerve fibre even when it was permanently cut off from its corresponding nerve cell. Now the neuron theory could not explain this. It did not fit the facts. It did not explain the absence of regeneration in the central nervous elements and its presence in the peripheral part. These facts necessitated a totally different view of function of the nerve cell. The purpose or function of the nerve cell was evidently to direct or to divert the nerve impulses, not to originate them. Thus the central nervous system was really a central exchange. The nerve fibrils were therefore the essential part of the nervous system; and the ganglion cells were only depôts or nerve shunts, so to speak. This, in point of fact, was the explanation offered by Apâthy and supported by Bethe, Nissl, and others. When an outlying nerve-fibre was cut off from the central exchange it was no longer functionally active and therefore degeneration set in. But the central part, which remained connected with its corresponding nerve cell or nerve shunt, still received impulses from other fibrils (through the cell) and did not degenerate. Later, even the detached outlying fibre was regenerated by the activity of the neurilemma cells and was ready to resume its function if linked on to the central nervous system. The essential elements of the nervous system, therefore, were the nerve fibrils. The nerve cells were accessories. But this was not the neuron theory.

MEDICAL SOCIETY OF LONDON.

External Operation on the Larynx.—Gastrotomy for Recent Gastric Ulcer.

A MEETING of this society was held on March 10th, Dr. F. DE HAVILLAND HALL being in the chair.

Mr. A. M. SHEILD read a paper on a series of cases of External Operation on the Larynx. Thyrotomy, he said, was an operation of considerable antiquity. The proper administration of chloroform was a factor of success. He advocated that the thyroid and trachea should be exposed by one longitudinal incision instead of making two operations as heretofore. He then proceeded to describe the operation which he was in the habit of adopting. It was generally done for actual or potential epithelioma. It was sometimes remarkable how well the patients recovered their voices. He then proceeded to narrate particulars of a series of cases. The first of these had been recorded in THE LANCET.[1] Another case was operated on for syphilitic stenosis, but the result was not favourable. In four other cases the operation was performed for various forms of neoplasm. The first of these was variously reported upon by three skilled pathologists respectively as papilloma, epithelioma, and a degenerated papilloma, potentially cancer; the next was a case of fibroma of the larynx; the third was a case of "warty papilloma"; and the fourth was a case of papilloma (though again the microscopists differed) which it was impossible to manipulate through the natural passages. In another case the operation was performed for a large foreign body. Mr. Sheild believed that this external operation had a great future before it, not only for malignant disease, but for other conditions unmanageable by way of the rima glottidis.—Dr. DE HAVILLAND HALL congratulated Mr. Sheild on the success of the case which had been exhibited before the society and thanked the patient for attending.—Mr. J. HUTCHINSON, jun., had assisted at a corresponding operation in 1879 performed by the late Mr. Adams. He was glad that Mr. Sheild had mentioned the failure of relief in syphilitic stenosis. He (Mr. Hutchinson) had just such a case under his care and he would not now think of operating. An important lesson from the paper was that malignant cases must be dealt with in the incipient—the so-called "pre-cancerous"—stage.—Mr. W. G. SPENCER referred to the difficulty which sometimes arose by the sudden supervention of difficult breathing in some patients. It was important to make the incision strictly median in its symmetry, otherwise one cord might be injured. He did not always think that it was an advantage to get primary union. Some cases of syphilitic stenosis could be operated upon with advantage, and cases were mentioned in illustration. He mentioned other conditions (other than those narrated by Mr. Sheild) in which he (Mr. Spencer) had performed thyrotomy. He advocated the median operation.—Dr. STCLAIR THOMSON thought that there was quite a future for this operation for growths in the upper parts of the larynx. However, cases in which thyrotomy was applicable were, he thought, relatively few. In syphilitic stenosis the operation was not suitable, but after a tracheotomy it was wonderful sometimes how the patients improved under iodide—far more readily than before the tracheotomy. He doubted the utility of the steam tent after thyrotomy; he had not found it useful. It was best to get patients up into a sitting posture.—Mr. SHEILD, in his reply, thought that possibly some cases of syphilitic stenosis might be suitable for operation. He did not generally advocate a preliminary tracheotomy in such cases provided the external wound was not closed too early. In cases of cancer of the larynx in which the glands of the neck were involved the disease was generally too far advanced for any operation excepting to relieve the dyspnœa. He quite agreed with Dr. StClair Thomson that cases requiring thyrotomy were relatively few.

Mr. C. W. MANSELL MOULLIN read a paper on three cases of Excision of Gastric Ulcer. Notes of the cases were read. In two of them the operation of gastrotomy with excision of the ulcer was performed for recurrent hæmatemesis, and in the third for persistent pain and vomiting. One of the former patients died on the ninth day after the operation, the gastric wound at the post-mortem examination showing little evidence of repair, being held together only by the sutures. The two others recovered completely. These, with those already published in THE LANCET,[2] made six cases of excision of gastric ulcer, five for hæmatemesis, with one death. It was usually held that the advisability of operating in these cases could be settled at once by comparing the actual mortality arising from hæmatemesis in cases of gastric ulcer with that which it was supposed might follow gastrotomy under similar conditions. But no such comparison was possible. On the one hand, the whole number of cases of hæmatemesis, trivial and severe alike, would be taken; while, on the other hand, there would be only those cases which were absolutely desperate, in which the operation was performed as a last resource, after everything else had been tried and had failed. The only comparison that could be made with any fairness was between those cases in which surgical measures were advised and declined and those in which they were advised and accepted. If this were done there could be no doubt as to the results. In three of the five cases quoted the patients were already so bloodless that transfusion had to be performed, and in two others operation had to be declined altogether, as the patients were beyond even transfusion. The mortality of such cases left to themselves without operation would compare very unfavourably with that of gastrotomy, even when performed under desperate conditions. Mr. Mansell Moullin had asked Dr. R. C. B. Wall, the medical

[1] THE LANCET, Nov. 14th, 1896, p. 1376.

[2] THE LANCET, Oct. 20th, 1900, p. 1125.

registrar at the London Hospital, to tabulate for him the statistics of all the cases of hæmatemesis from gastric ulcer which had been admitted during the five years 1895 to 1899. The total number was 246—202 women and 44 men. Among the women there were only four deaths. Three of these deaths occurred, however, in the 49 women who were over 30 years of age, so that the mortality in women under 30 years of age was less than 1 per cent., while in those over that age it was 6 per cent. In the men, on the other hand, taking all the ages together, the mortality from hæmatemesis alone was 14 per cent. When the other causes of death in gastric ulcer were taken into consideration it must be admitted that the death-rate due to gastric ulcer, especially in the case of women over 30 years of age and in men, was very much higher than was usually believed. There was no doubt that the main treatment of gastric ulcer was, and must remain, in the hands of physicians; but, as had been already recognised in the case of perforation, it was equally clear that certain contingencies or accidents might arise which could only be met by the adoption of prompt and decisive surgical measures. So far as hæmatemesis was concerned it was clear that much greater risk could be run in the case of women under 30 years of age than in the case of those over that age, and especially in the case of men. But if due allowance were made for this it might be laid down as a general rule that if there was one single severe hæmatemesis in a case in which the previous history suggested the presence of a chronic gastric ulcer (for in this case the bleeding had probably been due to an opening in an artery of some size), or if there had been two separate attacks of severe hæmatemesis at a short interval, or if there were frequent small hæmorrhages, so that the patient was becoming seriously anæmic, there was less risk in operating than in leaving the patient to the chance of the hæmorrhage stopping of itself.

OBSTETRICAL SOCIETY OF LONDON.

Suppression of Urine after Labour.—Sarcoma of the Ovary.—Exhibition of Specimens.

A MEETING of this society was held on March 5th, Dr. PETER HORROCKS, the President, being in the chair.

Dr. R. G. MCKERRON read a paper on Suppression of Urine after Labour. He at first directed attention to the fact that suppression of urine before and after labour was rare, notwithstanding the frequency of pathological changes in the kidneys during pregnancy. From recent experience he was disposed to believe that as a puerperal complication complete or partial suppression was more common than the small number of recorded cases would suggest. He described three cases which came within his own knowledge, adding short abstracts of three cases of complete anuria found in literature. The causation of anuria after labour was obscure. To assist in the solution of the causal problem an analysis of the leading clinical features of the case was given, from which Dr. McKerron concluded that several factors were concerned in its production and that these might be variously combined in different cases. The essential causes he believed to be—(1) a nephritis, similar to that underlying eclampsia, and probably superimposed on kidneys previously defective; (2) a neurotic temperament; and (3) shock resulting from precipitate labour or from intense pain accompanying its progress. The paper concluded with a few observations on treatment and on the possible effect of opium in contributing to the suppression.—Dr. R. BOXALL presented the details of two cases in which partial suppression of urine occurred, in one after labour and in the other after a miscarriage in the fifth month. In both cases the patient died and in both disease of the kidneys had previously occurred. Except for persistent vomiting till shortly before death there were no marked symptoms indicative of the grave condition of the kidneys. In the first case the urine was examined soon after labour and active measures, which included saline injections into the bowel and into the veins, were early adopted, but unfortunately these measures failed to re-establish the functions of the kidneys.—Dr. W GRIFFITH said that there appeared to be two classes of puerperal cases of suppression of urine, one being the common cases of acute nephritis with or without eclampsia, and the other very rare and quite unconnected with this disease. He had seen one of the latter some years ago. The patient was a primipara who was quite clear in her mind, without headache or uræmic symptoms, and with complete suppression of urine; she survived about five days and the treatment adopted failed completely. His recollection of the case was that it was a complication of acute septicæmia.—Dr. W. MURRAY LESLIE said that he could recall three cases where, however, the anuria did not prove to be complete, though the daily amount of urine voided was in excessively small quantities and loaded with albumin, and in each of these cases the main factor in setting up the condition proved to be alcohol. The first case seen in consultation had a long history of indulgence and ended fatally after a fortnight with uræmic symptoms. The patients in the other two cases in private practice—primiparæ—recovered. These two latter patients had never been previously suspected of alcoholism, and one had only acquired the habit during the pregnancy. The kidneys were not examined, as post-mortem examinations were not obtainable. He emphasised the importance of regular examination of the urine at intervals during the latter part of a pregnancy and of dealing firmly with the question of alcohol should any trace of albumin be found to be present.—Dr. W. W. H. TATE referred to a very remarkable case reported by Bradford and Lawrence in the *Journal of Pathology and Bacteriology* in May, 1898. The patient, a multipara, was delivered of a stillborn child on Feb. 28th, 1896. She was sick after the confinement was over and suffered from headache and slight drowsiness. She said she passed no urine from the time of her confinement until March 2nd, when two teaspoonfuls of urine were drawn off. There were no fits or twitchings; the patient gradually became worse and she died suddenly on March 7th. At the necropsy there was found to be necrosis of nearly the whole cortex of both kidneys. There was widespread endarteritis of the interlobular arteries, which were thrombosed and had caused necrosis of the convoluted tubules throughout the cortex. Dr. Tate also reported the following case of anuria following labour. The patient, a primipara, passed through a normal confinement on April 16th, 1899. All went well till the 23rd, when, while having a vaginal douche, the patient had a shivering attack and her temperature rose to 102·5° F. She felt faint and vomited. On the same day she complained of sore-throat. On the following day the temperature had fallen to normal, but she vomited four times during the day. On the 25th at 6 A.M. she began to hiccough, and this troublesome symptom continued until death. There was also some diarrhœa. The lochia appeared to be healthy and free from odour. The amount of urine passed was first observed to be below the normal on this day. On the 26th Dr. C. J. Cullingworth saw the patient and curetted the uterus. On the 28th the hiccough still continued, the temperature was subnormal, and still no urine had been voided. The patient died suddenly at 6.30 P.M. She complained of sudden pain over the heart and died before the nurse could get to the bedside.

The report of the Teratological Committee upon Mr. Stannus's specimen of Orbital Tumour in a Fœtus was read.

The PRESIDENT showed Two Sarcomata of the Ovary, each tumour being of the size of a football. They were removed recently from two patients who presented almost identical symptoms—namely, a large, freely moveable, solid tumour together with abundant ascites (necessitating paracentesis in one case to relieve dyspnœa), marked wasting, pyrexia, and pleurisy. The latter was thought to be due possibly to secondary growth. Both patients were making a good recovery. It was interesting to note that in one case the small intestines were so intimately adherent as to require a very careful dissection, whilst in the other case there were no adhesions. In the former the sarcomatous elements were most abundant, whilst in the latter the fibrous element predominated. Both women were multiparous; the one with the marked sarcoma was under 30 years of age and the other was about 40 years of age.—A discussion followed in which Mr. J. H. TARGETT, Dr. A. CORRIE KEEP, Dr. W. F. VICTOR BONNEY, Dr. TATE, and Dr. AMAND J. M. ROUTH took part.

Dr. TATE having shown a specimen of a Lithopædion, the PRESIDENT and Dr. A. L. GALABIN commented upon the case.

Dr. BONNEY showed two specimens from a patient, aged 50 years, who had suffered for 12 years from an Abdominal Tumour of large size. Last October she was seized with symptoms of subacute intestinal obstruction and subsequently she spontaneously passed an intussusception of the

large intestine about six inches in length, with immediate relief to the symptoms. The patient lived for nearly five months after this event, but finally symptoms of obstruction again appeared, and she died very rapidly. The abdominal tumour was found at the necropsy to consist of a large myomatous uterus and a large solid tumour of the left ovary, to the surface of which was attached what was probably a tubo-ovarian cyst of unusual size. Dr. Bonney remarked on the rarity of primary intussusceptions of the large intestine and the still greater rarity of their spontaneous expulsion. Intussusceptions occurring in persons over 50 years of age were very uncommon. The interest of the solid ovarian tumour centred around the relation between the tumour and its attached cyst, since outward inspection failed to decide as to whether the cyst was a very large hydrosalpinx which had attached itself to the tumour or whether the cyst formed an integral part of the tumour.

Dr. G. H. A. COMYNS BERKELEY showed a Uterus and Appendages removed from a patient who had died 12 hours after the termination of labour from acute peritonitis caused by rupture of an ovarian abscess. The patient, a multipara, had never suffered from any illness except an attack of pelvic inflammation which occurred before her marriage 10 years previously. The pregnancy had been uneventful. Intermittent pains commenced on Jan. 5th. On the 7th the pain became continuous and distressing and the patient began to vomit yellow fluid. Later in the day the labour terminated naturally, but the patient became rapidly worse and much collapsed, death occurring at the end of 12 hours. At the post-mortem examination purulent peritonitis was found to be present with a large amount of semi-purulent fluid in the abdomen. The right ovary and both tubes were healthy, but the left ovary formed an abscess sac which was bound down to the posterior surface of the uterus by old adhesions. There was an opening at the lower part of the abscess, through which pus was escaping. The abscess had also burst into the broad ligament and pus was escaping from an opening in that structure.—The case was discussed by the PRESIDENT, Dr. BOXALL, Dr. M. HANDFIELD-JONES, Dr. T. W. EDEN, Mr. TARGETT, Major H. R. WOOLBERT, I.M.S., and Dr. GRIFFITH.

CHELSEA CLINICAL SOCIETY.

Discussion on the Nature, Origin, and General Principles of Treatment of Cancer.

THE annual clinical debate of this society was held at the Jenner Institute of Preventive Medicine, Chelsea-gardens, S.W., on March 11th, Dr. C. A. MORRIS, C.V.O., the President, being in the chair.

The PRESIDENT, after a few opening remarks, called upon Dr. JAMES GALLOWAY to open the debate on Cancer, its Nature, Origin, and General Principles of Treatment.

Dr. GALLOWAY said that the present was a good occasion for a revision of the additions to their knowledge on the subject of cancer made during the last eight or 10 years. Renewed investigations were being actively undertaken to solve the great pathological problem of the origin of the disease with every prospect of encouragement and it was well to appreciate the exact state of their pathological knowledge. The last great stimulus to investigation on the subject was the enunciation of the thesis of the parasitic origin of the disease and most of the researches of the last decade had been made as a consequence of this proposition. It must be admitted that the foundations of this hypothesis had been gradually weakened, unfortunately with a corresponding diminution in the activity of researchers. There could be no two opinions that their knowledge of the nature and development of cancer and also of its treatment had much advanced as the result of the investigations to which he had alluded, in spite of their apparently fruitless nature at the time. He hoped that new investigations would add still more to their knowledge of the origin of the disease. Speaking of other hypotheses of the origin of cancer, Dr. Galloway said that they had also been of assistance in advancing their knowledge. Little had been added to strengthen the theory upheld by Cohnheim that tumours were due to the abnormal and late development of remnants of embryonic tissue. As a general explanation the accumulated evidence was much against this hypothesis. That Cohnheim's hypothesis explained the origin of certain varieties of tumours which were perhaps more of the nature of deformities had always been recognised, and recent work as to the development of certain forms of epithelioma from remnants of developmental tissue in nævi had allowed to some extent of its wider application. Unfortunately, the identity of the actual cause of the growth of these tumours originating from nævi was not discovered, and the reason of their assuming malignant characters, the most important of all questions, was not explained. Cohnheim's explanation especially failed in attempting to account for the characters of malignant growths. A certain amount of knowledge had also been obtained by the recognition of the fact that epithelial cells, accidentally transported into tissue of different nature, were capable of multiplication and of the formation of new epithelial masses. The "implantation cysts" described in the eye and certain masses of epithelium in the corium occurring as the result of injury were examples of this process. This new epithelial tissue reproduced the characters of the cells of the region whence it was originally derived; but in cases where malignant features had been assumed they were as much at a loss as ever in accounting for this additional characteristic. A point of the greatest importance to be recollected was that the dangerous attribute of the malignant tumour was not simply the power of multiplication possessed by its cells, but the fact that the cells undergoing multiplication did not content themselves by remaining in their normal position and relation to surrounding tissues within their basement membrane in the case of carcinoma, but consisted of the power which they assumed of passing beyond this limit and of invading the neighbouring tissues where normally they ought not to exist. The malignant element did not consist in the overgrowth but in the assumption of this new power of invasion. Considering next the parasitic hypothesis of the causation of cancer, Dr. Galloway remarked that none of the structures described as parasites of protozoal nature in carcinoma and sarcoma had withstood the test of criticism and could now be reasonably considered to be protozoal parasites. Analogies had been made, which at one time promised important information as to the cause of cancer, between certain diseases characterised by overgrowth of tissue in the lower animals, and undoubtedly due to protozoal infection, and the peculiar overgrowth of tissue which occurred in cancer, but these had turned out to be less informing than had been hoped. One of the most interesting of these was the infection of the liver in rabbits by the coccidium oviforme, which resulted in the appearance of nodules in the course of the bile-ducts consisting of an adenomatous overgrowth of their epithelial lining. But although there was much increase of epithelium in these nodules the epithelium was arranged in the normal fashion, and although the lining membrane became elaborately convoluted the epithelial cells did not overstep their limiting membrane and never assumed malignant characteristics. Indeed, it might be fairly asked whether the intracellular or extra-cellular position of the coccidia directly produced multiplication of the epithelial cells, or whether this multiplication was not rather due to irritation of the epithelium produced by obstruction of the ducts by the parasites and should be considered as a secondary consequence of their presence. A very important point arising from the study of these protozoa was that they were very readily recognised; there could be no question of their existence even on simple microscopical examination, while their processes of reproduction could be readily watched. If they were removed from the liver while living and kept in a moist atmosphere their protoplasm might be seen to divide and the various stages of multiplication external to their host might be readily observed. In none of the supposed protozoal structures seen in cancer had vital changes of this nature been clearly demonstrated. It was noticeable at the present time that observers were inclined to attribute to certain budding fungi a causal rôle in the production of cancer. Two great difficulties stood in the way of accepting this theory—namely, in the first place, that similar bodies had been discovered and had been claimed to be the causative elements in a class of diseases of which the origin, development, and structure were totally different from cancer—namely, the granulomata. Pathologists were familiar with the writings of authors who had described cases of blastomycosis or blastomycetic dermatitis. Some of these observers claimed that the yeast-like fungi which they had found to be present were the actual cause of lesions which in many respects resembled tuberculosis. Of these observations some would not now be claimed to lead to the conclusions originally stated by their authors, but granting that some of the observations and conclusions were to be accepted as correct it was very difficult to believe that similar parasites were on the one hand capable of producing

a granulomatous tumour and were also capable of producing such a totally different growth as a carcinoma of the breast or other glandular organ. In the second place, it was very probable that new growths, including the carcinomata, might be infected occasionally, though rarely, and probably accidentally, with certain fungi producing both hyphæ and spores. These fungi apparently grew readily when introduced into the tumour and in all probability were capable of cultivation outside the body. But it would be unjustifiable to form the conclusion that the fungus found to be present was the cause of the cancerous tumour. If in such a case a culture of the fungus was obtained and inoculated into a susceptible animal and proved to be pathogenic it was much more easy to believe that the growth which would appear as the result of inoculation would have the characters of a granuloma rather than of a cancer. It was from their clinical experience that they were all likely to inquire as to the truth or falseness of a pathological theory, and it must be admitted that clinical evidence gave but grudging and very scant support to the parasitic theory of the origin of cancer. There was a very interesting body of clinical evidence which had not been greatly appealed to as yet in considering this question derived from those diseases in which prodromal morbid states, it might be for years, preceded the development of cancer. In Paget's disease of the nipple they had a prodromal state preceding the development of cancer. But according to the evidence of some observers the prodromal state was in this case too nearly allied to cancer itself to furnish a good example. These authors would call Paget's disease by some such name as "malignant papillary dermatitis." He referred particularly to such conditions as in xerodermia pigmentosa and to certain forms of abnormal pigmentation. In both of these conditions there occurred, possibly for years before the development of a form of carcinoma which proved fatal, an alteration in the texture of the integument. In the case of the former this change was characterised by the development of pigmentation resembling exaggerated freckles and accompanied by atrophy of the skin. In the case of the latter melanin was deposited in such abnormal positions as in the clefts of the fingers or toes, or about the nails, in localised areas with clearly marked margins. It was surely more easy to conceive of these changes as being successive manifestations of a progressive process of degeneration, the earlier signs being alteration of the pigment distribution and the later the disorganisation of the means by which the growth of the epithelium was kept in check and properly distributed and arranged. And if it was conceded that the distribution of pigment was very directly influenced by the nervous system, might not the process continue and the disorganisation of nervous control end in allowing the resistance of the connective tissues to be impaired and the epithelium to escape from control? So, also, in the prodromal conditions, of which senile keratoma was an example, from which arose epithelial cancers of varying degrees of malignancy, was it not an easier conception to hold that the whole course of the disease was continuous than to invoke the action of a parasite when at last the epithelial cells were so affected as to show evidence of the peculiar form of overgrowth which was recognised as "malignant"? Considerations such as these led to discussions on the subject of the "physiological equilibrium" of the tissues and its alteration in disease so interestingly placed before them by Dr. C. P. White in his Erasmus Wilson lectures, but such discussions at the present time were very fruitless because they did not know the factors which maintained and interfered with this condition. It must be the desire of everyone that observation and experiment would in the near future tell them why the balance was upset and why a tissue cell, instead of leading its normal life, suddenly ran riot, penetrating beyond bounds, and multiplying with an energy never approached in its usual normal well-ordered existence.

Dr. JOHN F. W. TATHAM (superintendent of statistics, General Register Office) said that in England and Wales during the last four years the deaths from malignant disease had averaged more than 25,000 a year. In the returns issued from the General Register Office the term "malignant disease" included all the diseases classed as such in the nomenclature of the Royal College of Physicians of London. Hitherto all forms of malignant disease had been grouped together under one heading in their national returns, but with the new century a revised list of diseases had been inaugurated, of which a shortened form was published for London in the weekly return from which he quoted. The table showed that the carcinomata, or true cancers, were distinguished from the sarcomata, and these again were distinguished from the indefinite forms of disease which were ascribed in medical certificates to "malignant disease," or "cancer" merely without further qualification. That medical practitioners appreciated that improvement in the classification of a most important group of diseases was shown by the fact that in London since the beginning of the present year, when the new list of diseases was first published, the deaths from malignant disease, in the aggregate rather more than 800 in number, had been differentiated; thus, in the medical certificates supplied for registration 52 per cent. had been certified as from carcinoma, 6 per cent. from sarcoma, and the remainder, amounting to considerably less than half, to "cancer" or malignant disease. It was highly gratifying to him, as he was sure it would be to them, to note how readily the practising members of their profession had responded to any attempt to secure greater accuracy in the statistical records of the fatal cases coming under their care. He took the opportunity of cordially thanking many of the physicians and surgeons present for the courtesy and kindness with which they had invariably answered his requests for fuller information respecting deceased patients than that which could be got into the ordinary form of certificate. Malignant disease in the aggregate—i.e., without limitation as to organ or part affected—was more fatal to women than to men. According to the latest returns the male death-rate from cancer in England and Wales was equal to 672 in each 1,000,000 living, whilst the female death-rate amounted to not less than 975 per 1,000,000. But this excess was due to the unequal tendency of malignant disease to attack the generative organs of the female than those of the male. On reference to the following table it would be seen that when the deaths from cancerous affections of the ovaries, uterus, and breast were subtracted from the total cancer deaths of females, the remainder gave a death-rate among females which was considerably below that among males. Thus, in the four years 1897–1900 the male deaths from cancer less the deaths from disease of the organs referred to corresponded to a death-rate of 645 per 1,000,000, whilst the female rate with the same limitations did not exceed 568 per 1,000,000.

Cancer Mortality, 1897–1900: Total Deaths in the four years 102,685.

Parts affected.	Deaths.		Rate per 1,000,000 living.	
	Male.	Female.	Male.	Female.
All parts	40,317	62,368	657	962
Lip	647	74	11	1
Mouth	508	115	8	2
Tongue	2,124	271	35	4
Throat	891	334	15	5
Œsophagus	2,358	852	38	13
Stomach	8,369	8,355	136	127
Intestines	6,312	6,731	103	103
Liver	5,532	8,654	90	132
Generative and mammary organs	728	25,151	12	384

The mortality from cancer was not very excessive until some time after the twenty-fifth year of age. Thus at ages under 35 years it averaged from 44 to 66 per 1,000,000, but as age advanced the mortality increased in both sexes very rapidly until at the more advanced ages it was enormous. The following table showed that.

Cancer Mortality at Certain Ages, 1900.

—	Annual death-rate per 1,000,000 living at each age.	
	Male.	Female.
All ages	672	975
Under 35 years	44	66
35–45 years	418	942
45–55 ,, ...	1483	2433
55–65 ,, ...	3796	4561
65–75 ,, ...	5735	625
Above 75 years	6715	7468

It was notorious that in recent years the mortality from cancer had increased very rapidly, not only among females but among males. This was shown by the subjoined figures:—

Annual Rate of Mortality in England and Wales: Rate per Million Living.

Males.		Females.		Increase in 1891-1900 per cent.	
1861-1870.	1891-1900.	1861-1870.	1891-1900.	Males.	Females.
242	597	519	903	147	74

It thus appeared that although at the present time women suffered much more severely than men from malignant disease, nevertheless the disease during the last 30 years had increased among men much more rapidly than among women.

Dr. G. T. BEATSON (Glasgow) said that they must not lose sight in a discussion of the kind they were engaged in of the subject of tumour formation as a whole, and any theory explaining only one neoplasm was, in his opinion, defective and unsatisfactory. In regard to that there were one or two statements that he thought should be discussed at that time. They must remember that there was undoubtedly a connecting link between malignant and benign growths. This arose from the fact that being composed of the tissues of the body these have all had a common parentage They have all sprung from two epithelial cells, from a male and from a female cell, and these were to all intents and purposes epithelial cells. As a consequence of that, no matter what the ultimate history of a cell might be, it had had in one time of its history an epithelial form. The character of the cell might be altered and the differentiation might be slight in some and in others it might result in the formation of tissue of the highest type. These differentiated tissues as long as they retained their specialised form "bred true"—that is to say, an epithelial cell produced an epithelial cell and a connective tissue cell produced a connective tissue cell. Differentiation lessened the proliferating power of cells and daily proof of that was seen in the amount of regenerative power shown in wounds and injuries, whilst regeneration took place copiously and freely in the lower tissues like epithelial tissue, while those of a higher type like muscles could scarcely be reproduced. Certain facts seemed to show that this differentiation only masked the epithelial type to which he had referred. Less highly specialised cells might revert to their primitive epithelial form, and in no other way could they explain the well-known fact that benign tumours might become malignant. If a benign tumour could become malignant, if it could revert to a lower type, they must not deny to the tissue which it represented the same power. If the influence or influences that caused tumour growth came into play the effects would vary with the tissue involved. If it was a highly specialised tissue they would have a limited growth—i.e., a benign tumour; if the tissue attacked was very little differentiated then they would have an indefinite growth, with great proliferation—that is to say, a malignant tumour. The proliferating power was to be measured by the amount of specialisation to which the cells had attained or which they possessed at the time of the attack, because they might have degenerated. They had then in the body always present a proliferating power in the cells that varied with the natural differentiation of the tissues that might be lessened in amount. The tissues might be thus brought to a lower standard with a consequent increase of proliferating power. That was one factor in tumour growth and the other factor required was the necessary stimulus. Before he discussed that he would like to draw attention to the similarity that existed between cancerous and early embryonic tissue. In the body the tissues that were formed at first were similar in structure to those in cancerous growths, and it was only in connexion with that embryonic tissue and its power of development that they had anything at all approaching the proliferative power of malignant tumours. In connexion with embryonic development there had also to be noted the relation of malformation to neoplasms. Uniovular twins depended on a pathological process, and this was also the case in joined twins, in children with extra limbs or incomplete bodies attached, in children with sacral tumours of fœtal tissue, and in children with dermoids. All these various gradations formed a complete series. Dr. Beatson, after expressing his belief in the local origin of cancer, passed on to the consideration of the factor or factors that started local cell proliferation or the causes of tumour formation. A natural division was into causes from without and those from within. Of those from without the parasitic theory was the only one that required notice. This theory was supported by the discovery of the so-called cancer bodies but the fatal objection to that view was found in the consideration of the conditions observed in congenital tumours and in secondary growths. Another difficulty in this connexion was the absence of toxins. He believed in an intrinsic cause that explained the commencement of local cell proliferation which was based on the results observed in oöphorectomy for mammary cancer. The chief interest in this operation lay in the fact that after its performance there had been a disappearance of cancerous tissue. Others besides himself had obtained that result and various explanations had been given of the circumstance. It had been suggested that it was because of diminished vascularity of the parts, also that the cause was from an increase of resistance on the part of other cells in the body, and another view had been put forward that the effect was due to the opening of the abdomen. In his opinion, however, the above reasons were quite inadequate and he considered that a more potent factor must be sought. He believed that the explanation was to be found in the facts connected with the testes and ovaries. In his original paper he had suggested that these organs might be the exciting cause of cancer in two possible ways, but a third possible explanation was to be found in what happened in connexion with the function of the testes and ovaries. Both these organs had to prepare cells to perpetuate the species; the testes did this by forming spermatozoa out of epithelial cells, the ovaries did it by carrying out those maturation phenomena which enabled certain of the epithelial cells contained in them to perform the function of fecundation. By what agency was this done and what was the stimulus that caused the cellular division in the testes and the cellular activity in the ovary? In his opinion it must be a secretion of some kind, and that being so, where was it elaborated? Was it secreted by the organs themselves or by all the tissues of the body under the stimulus of these organs, or were such organs the instruments for ratifying the work done by the rest of the body? In other words, was the fructifying fluid that gave to the spermatozoa and the female ovary their procreative power the product of the whole of the body and not a local manufacture? Such a view was not altogether unsupported by facts that had been observed in connexion with the thyroid gland and in regard to the subtle influences that the testes and ovaries exerted on the general nutrition of the body. There had also to be considered the profound impression made on the whole fabric of the body by the removal of these organs which was seen in the case of eunuchs and after oöphorectomy. What was the actual relationship between the rest of the body and the testes and ovaries, supposing the condition to be as he suggested? When these organs dwindled with age or became functionless what happened to this body secretion? Did it dwindle also under the lessened influence of these organs ceasing entirely to be given up on their removal or complete atrophy? or did it continue after they were functionless and be then again taken up by the tissues themselves? There was the further problem as to when those organs lost entirely their influence over the functional activity of the body. The impossibility of answering these queries rendered reliable conclusions difficult, but the facts, however, seemed to point to the tissues ceasing to give up this fluid on the removal of the testes and ovaries. They were now in a position to judge what bearing these views had on the causation of the cancerous process. He need hardly point out that the existence of such a fructifying fluid in the body tissues furnished an explanation of many observed facts and opened up also other possibilities. It was of the greatest importance in connexion with cell proliferation and tumour formation. It furnished the factor that was alone wanting to explain the case, for, as they had seen, the tissues already possessed in varying degree the power of cell division or proliferation. If it were granted that such a fluid existed in

the body it was likely to influence those cells the proliferating power of which was greatest. Special proliferating power might exist under two conditions, natural and acquired. By acquired he meant loss of differentiation; in other words, loss of functional activity, so that such cells were no longer of any service in the economy and reverted practically to their embryonic state. When dealing with conditions where they could only theorise any explanation put forward could be judged in one of two ways. It could be disproved by facts or strengthened if supported by facts on which there was agreement. Applying the latter test to his theory he selected a few well-accepted facts—namely, the connexion of cancerous growths with long-continued irritation and with organs where senile changes were occurring—namely, physiological atrophy. He quoted the incidence of cancer in those whose natural body powers were declining through age. He discussed Cohnheim's conclusions, Ribbert's isolations, and Adami's groups. He cited also the influence of heredity, the conditions connected with cancer houses, the occurrence of carcinoma during pregnancy, and the mammary recurrences after long intervals. Dr. Beatson then went on to say that his views on the cancer process were as follows: that it could only develop in tissues that had special proliferating power, either natural, as in Cohnheim's "rests," or acquired in one of many possible ways. Further, the actual exciting cause of the cell proliferation was a secretion from all the tissues of the body and possessed of fructifying powers. A mutual relationship also existed between the character and amount of this secretion and the testes and ovaries. Another factor in connexion with it was the inherent vitality of the tissues themselves. In that way alone could the disappearance of cancerous tissue under oöphorectomy be satisfactorily explained. That was an instructive and important clinical fact which was altogether apart from the question of cure. Such a view of carcinoma was apparently a return to the old spermatic theory, but it differed from it in a very important point, because it did not imply a conversion of the normal tissue into another kind of tissue. Cancerous tissue was composed of ordinary body cells and all that the body secretion he had discussed did was to furnish a stimulus for proliferation when the condition of the cells allowed. The late Dr. C. G. Ritchie, whose work on ovarian physiology and pathology was full of interest, wrote the following suggestive remark: "Perhaps by the careful study of ovarian growths our knowledge of the nature of malignancy may some day be signally increased." Dr. Ritchie also said: "It is well to bear in mind what Dr. Bright enunciates so well that the ovaries in their natural structure seem to present a prototype of that involved system of cellular enlargement observed in malignant growths." Dr. Beatson concluded his remarks by discussing the general principles of treatment, in which he laid stress on oöphorectomy and the administration of thyroid extract, in moderate doses, especially in connexion with inoperable mammary cancer with no visceral complications.

The meeting was then adjourned to March 18th.

HARVEIAN SOCIETY OF LONDON.

Exhibition of Cases.—Some Rare Cases of Sarcoma of the Thyroid Gland.

A MEETING of this society was held on March 6th, Mr. W. WATSON CHEYNE, the President, being in the chair.

Dr. C. J. N. LONGRIDGE showed a girl, aged seven years, with an Irregular Temperature of three months' duration for which no obvious cause could be found. Typhoid fever had been eliminated by repeated non-reaction to the Widal-Grünbaum test. No evidence of tubercle could be detected. It was not considered desirable to apply the tuberculin test on account of the irregularity of the temperature. The only evidences of disease that could be detected were König's sign, which had lasted for six weeks, a transient erythematous rash, some pain and swelling of both wrists, and the temperature and wasting.—Dr. PENROSE considered the case to be an obscure rheumatic condition.—Dr. E. CAUTLEY thought that this might be an early case of osteo-arthritis, and he believed that there was a little swelling about the wrist-joint. If so, that would support the view, and febrile attacks were a feature of some such cases. He had never seen a case of such long duration without definite joint change.—Dr. G. A. SUTHERLAND agreed that there were cases of osteo-arthritis associated with high temperature. He thought that wasting was a striking feature in the case and agreed that there were wrist changes. Cardiac rheumatism was a possibility. He also thought that it might be a case of periodic paralysis and periodic vomiting, which cases were not generally well understood but seemed to be associated with a family complaint. He asked whether there was a history of a similar condition in other children of the family and what other illnesses the present patient had had.—Dr. LONGRIDGE, in reply, said that he had seen cases of osteo-arthritis in which the causal factor seemed to be a septic condition of the teeth, but the condition cleared up when the teeth were purified. The present child had bad teeth, but they were not septic. The family history was good. She had two brothers older than herself and a younger sister, all robust. The only diseases which the present child had had were whooping-cough and measles.—In answer to the PRESIDENT he said that the red blood corpuscles were normal in number, but there was some leucocytosis, which had increased.

Dr. CAUTLEY showed a case of Disease of the Cauda Equina. The patient, aged 26 years, had a chancre eight years ago and presented a scar on his penis. He was quite well until last October, when he had a sudden retention of urine. Four days later he could not hold his motions. He was treated by catheterisation and aperients, both as an out-patient and as an in-patient, at a hospital, but the disease was not diagnosed. Later the actual cautery was freely applied to the sacral region when he was in the infirmary. In December he began to have some loss of power in the left leg and numbness in the buttocks. At present he exhibited some loss of power in the extensors of the left leg. The cremasteric and patellar reflexes were very active, while the plantar reflex was lost. The sphincter ani had lost power and did not grasp the finger on examination. There was diminution of sensation to touch, pain, and temperature, with a feeling of numbness over a considerable area of the buttocks, the perineum, the penis, and the scrotum. Testicular sensation was impaired. He could not pass urine at first but now had partially regained control over the bladder. Stools were occasionally passed unconsciously. The probable diagnosis was syphilitic disease of the cauda equina, that part from which the second, third, and fourth sacral nerves arose. He was treated with mercury and iodide of potassium.

Dr. CAUTLEY also showed a typical instance, clinically, of Primary Lateral Sclerosis in a man, aged 25 years. No possible exciting cause had been found except gonorrhœa about two years before the onset, which took place three years ago.

Mr. P. L. DANIEL read a paper on Some Rare Cases of Sarcoma of the Thyroid Gland and exhibited a large number of pathological and microscopical specimens from cases which had suffered from this disease.—The PRESIDENT said that sarcoma of the thyroid was apparently not very common. He was interested in the statement that out of six cases of malignant disease of the thyroid at Charing Cross Hospital four were sarcomata. He had not generally examined such cases histologically, but had accepted the statement of the books as correct that sarcoma was much more rare than carcinoma. He had not yet encountered a case of malignant disease of the thyroid which he felt justified in operating upon; and those cases which did not seem to benefit under treatment were not kept in hospital, so that no opportunity of post-mortem examination was afforded. The most interesting question was that of treatment, because malignant disease of the thyroid was one of the most terrible forms, on account of the great distress which it caused. In one case which was diagnosed as sarcoma of the thyroid a good deal of benefit resulted from the use of Coley's fluid. One case went on for more than a year; the patient was injected with Coley's fluid, and apparently there was a complete cessation of the growth. But the patient had influenza and it lighted up again.—Mr. CAMPBELL WILLIAMS asked whether there was any pigmentation in the skin in these cases. He agreed that primary sarcoma or epithelioma of the thyroid was excessively rare.—Dr. CAUTLEY asked whether in any of the cases the growths in the thyroid were secondary. Occasionally in cretins who were improving under thyroid treatment, if the treatment was stopped the thyroid began to enlarge, but it would go down again on the resumption of the treatment. There was no doubt a connexion between the thyroid gland and the sexual functions.—Dr. LONGRIDGE asked whether there were any secondary growths in the

bones, and, if so, whether such growths partook of the histological character of the thyroid itself.—Mr. DANIEL, in reply, said that the skin was not pigmented. He showed a specimen in which there were secondary nodules affecting both lobules of the thyroid. With the exception of the spine in one case there had been no tumour of bone or lung in any of the cases, although the walls of the subclavian vein were undoubtedly involved. On section the new growths in the spine were seen to be simply pure sarcomata.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Meralgia Paræsthetica.—The Relative Inefficiency of Cacodylates as Therapeutic Agents.—The Coördination of Medical Research in Edinburgh.—Exhibition of Cases and Specimens.

THE seventh ordinary meeting of this society was held on March 5th, Professor T. R. FRASER, the President, being in the chair.

Dr. EDWIN BRAMWELL showed a case of Meralgia Paræsthetica (Bernhardt's Sensibilitätsstörung). The patient, a miner, aged 43 years, for 18 months had suffered from pain over the right hip and over the lower part of the right thigh anteriorly, also from a feeling of coldness on the outer side of the right thigh. The pain was greatly increased by walking and was so severe that it had incapacitated him from work. In other respects he enjoyed excellent health; he had not had rheumatism or syphilis. The condition was attributed to sleeping on hard boards in damp clothes. Upon examination an area of relative cutaneous hyperæsthesia was found on the outer side of the right thigh, while there was marked tenderness on pressure over a point one and a half inches below and just external to the right anterior superior iliac spine. An exhaustive examination failed to elicit any other objective signs of disease; the patient's symptoms were obviously referable to the right external cutaneous nerve. Since no improvement resulted from rest in bed and faradism Dr. H. Alexis Thomson cut down upon the nerve at the level of Poupart's ligament and excised three inches. The nerve and its relations appeared to be normal. As an immediate consequence of the operation the pain which had previously been present, even when the patient lay in bed, disappeared. Dr. Bramwell showed photographs to illustrate the area of anæsthesia produced by division of the nerve. For two or three weeks after the operation the patient complained of a feeling of tenderness on deep pressure over this area. Four weeks after the operation he was quite free from pain but still had a feeling of stiffness about the front of the right thigh. The excised nerve was placed directly in 5 per cent. formalin. No degenerated fibres were to be seen in sections stained by Busch's method. Sections taken from pieces of the nerve hardened in chrome alum did not stain with Weigert's method. Was this to be accounted for by the fact that the nerve had been taken from the *living* body and placed directly in formalin? Dr. Bramwell considered meralgia paræsthetica to be a distinct clinical entity, probably not uncommon, Roth having recorded 15 personal observations. The condition was well worthy of notice for purposes of exclusion in differential diagnosis, while cases occurred where the pain was so severe as to unfit the patient for work. The pathology was obscure. It might be that in some cases it was merely a neuralgia, in others a neuritis. Faradism appeared to have been efficacious in the treatment of several of the reported cases. Resection of the nerve was only justifiable in severe and persistent cases.

The PRESIDENT read a paper entitled, "The Relative Inefficiency of Cacodylates as Therapeutic Agents," with lantern illustrations. He stated that compounds of cacodylic acid [$As(CH_3)_2O(OH)$] had of recent years been largely used as substitutes for the commoner forms of arsenical compounds. It was asserted that new preparations had certain advantages over the older preparations of that element which were usually employed. A considerable amount of clinical experience had already been accumulated regarding the actions of several of the cacodylates, especially that of sodium and iron. The cacodylate of sodium had been administered in almost every disease where the ordinary preparations of arsenic had been usually employed—as, for example, anæmia, leukæmia, pseudo-leukæmia, many skin affections, phthisis, leprosy, bronchitis, chorea, and neurasthenia. Almost everyone who had experimented chemically with the cacodylates had expressed themselves most favourably with regard to their value. Dalché of Paris stated that of 11 cases of pulmonary tuberculosis treated with sodium cacodylate injected subcutaneously three patients were undeniably cured, four were greatly improved, two showed no results, and two (very advanced) became worse. Dr. Anelli had described a case of severe pulmonary tuberculosis in which remarkable success was attained by the intravenous injection of 0·8 grain daily. Rocax treated 80 cases of tuberculosis and stated that except in very advanced cases the cough, night-sweats, and pyrexia disappeared in cases of pulmonary tuberculosis and that the body weight was increased. He made the remarkable statement that in cases of "latent, suspected, or threatened tuberculosis cacodyl triumphs." Gallois, who had given sodium cacodylate by the mouth, claimed that chronic bronchitis with asthmatic paroxysms of elderly people was the disease which was chiefly benefited by the new drug. Ewart noted the "brilliant effects [of cacodylates] in all cases where arsenic was indicated, especially in chorea, malaria, pernicious anæmia, and Basedow's disease; also in the hectic fever and the cough and expectoration of phthisis, and in all nervous exhaustions." Bormans summarised his experience with cacodylate of sodium as follows: "It is a remedy which may be tolerated in much larger doses than those usually given and therefore is valuable in all cases where large doses of arsenic are indicated, as in anæmia and chlorosis, especially where iron is not tolerated. Burlureaux had good results in neurasthenia and chlorosis, Doulos in pseudo-leukæmia and psoriasis, and Reynard in psoriasis, lupus erythematosus, cutaneous tuberculosis, sarcoma of the skin, and leprosy. Gautier stated that the salts of cacodylic acid did not act in any special disease but in all weakened conditions, and the success was the more remarkable in that it was free from risk. He stated that the daily quantity of subcutaneous injection was 0·05 gramme, equal to 0·37 grain of arsenicum, or 51 minims of liquor arsenicalis. The President pointed out that the employment of cacodylates was based on the supposition that these compounds, though rich in arsenic, were almost inert, and so large quantities of arsenic might by their use be introduced into the body with safety and advantage, but he thought that if they were not capable of causing toxic effects when given in quantities relatively far larger than those of the usually employed compounds of arsenic, they must to a corresponding degree be pharmacologically inert and therapeutically inefficient. To test this opinion he had administered cacodylate of sodium and cacodylate of iron in several of those diseases where arsenic was commonly employed. Taking first the disease chorea, in which the value of preparations of arsenic had been abundantly proved, cacodylate of sodium was given to three patients with the following results:—

CASE 1.—The patient was a girl, aged nine years, ill for 10 days, who was treated for 45 days. The minimum and maximum doses were three-quarters and four and a half grains in 24 hours. As there was no improvement liquor arsenicalis was substituted in doses varying from nine to 12 minims in 14 hours. In seven days marked improvement was noted, and in 10 days no choreic movements were present.

CASE 2.—The patient was a boy, aged nine years, ill for four weeks, who was treated for 23 days. The doses of cacodylate varied from three-quarters of a grain to 11¼ grains. After 20 days improvement began, when the dose was seven and a half grains in 24 hours, and continued so until recovery, which was delayed by diarrhœa.

CASE 3.—The patient was a boy, aged 13 years, ill for 10 days, who was treated for 52 days, the daily dose varying from one and a half grains as a minimum to 10½ grains as a maximum. There was hardly any improvement until the twenty-eighth day and then very slight until the fifty-second day. On the substitution of liquor arsenicalis in doses of from six to 12 minims per diem there was a marked improvement in seven days; this was great in 14 days, and he had entirely recovered by the twenty-first day.

In one case of acute eczema affecting the whole surface of the body except the scalp cacodylates were tried. During 17 days previously to this drug being given material improvement with disappearance of the acute symptoms had occurred under mere regulation of diet, purgatives, and exalgine. Sodium cacodylate was given for 23 days and then intermitted for four days because of nausea and vomiting and again given for other two days. There was slight improvement in the skin condition in six days and this continued gradually. The dose varied from three to 15 grains in 24 hours. One case of spleno-medullary leucocythæmia was treated with sodium cacodylate for a period of 12 days with doses of from one to three grains in 24 hours. Neither in this case nor in six cases of simple anæmia was any

material increase produced in the hæmocytes. Even if cacodylates were effective preparations of arsenic such an increase would not be anticipated, for he (the President) had more than 15 years ago convinced himself definitely that arsenical preparations were incapable of increasing either the red cells or the hæmoglobin in this disease. When cacodylate of iron was given in anæmia the condition was unmistakeably benefited, but this therapeutic effect was much the same as might at any time be obtained by administering any of the efficient iron preparations. It thus appeared that the arsenic in cacodylic acid and in its salts was almost inert when regarded either as a therapeutic or as a poisonous substance, but that when certain bases having therapeutic properties, such as iron, were united with cacodylic acid, these bases were capable of producing their special curative effects. These results were, the President considered, rendered intelligible when the chemical properties of cacodylic acid and its compounds were considered. He suggested that when a cacodylate was administered the arsenic remained locked up in it, in so far as its pharmacological energies were concerned. It thus remained inert pharmacologically, and, if so, necessarily also therapeutically, and it probably passed through the body without undergoing dissociation. To determine the last point the urine of several of the patients who were receiving cacodylates was examined chemically with reference to the presence and form of the arsenic contained in it. Gautier had already shown that the arsenic in cacodylates could not be isolated by Marsh's process until the organic constituent had been destroyed by a very prolonged oxidation process devised by him. The result of the analyses of the urine in the President's patients was that arsenious acid dissolved in urine gave up the arsenic when treated with Marsh's process without any preliminary oxidation or destruction of the organic matter, whereas cacodylic acid failed to do so until the organic matter had been destroyed by a very prolonged and elaborate process of oxidation. The conclusions arrived at were the following. Clinical observations and chemical analyses agreed in showing that when a salt of cacodylic acid was administered to a patient it was absorbed and was eliminated, but with the arsenic which it contained so firmly combined with the other constituents that it did not become dissociated and was therefore incapable of forming any compound in the body which could produce the well-known pharmacological activities of the compounds of arsenic usually employed for therapeutic purposes. While, however, cacodylates were to be regarded as useless therapeutic agents in so far as they were compounds of arsenic, it might finally be observed that they were likewise inconvenient substances to administer to patients. In all the cases in which they were given by the mouth disorders of the alimentary canal—such as nausea, vomiting, and diarrhœa—were induced by them long before the maximal doses were attained, and in some cases these disagreeable effects required the administration to be suspended. Only when the administration was by subcutaneous injection did these disorders fail to be produced, but this was a method of administration which could rarely be continued over the long periods of time which were most usually required in the therapeutic use of arsenic preparations. Further, even by subcutaneous injection, as by oral administration, the less important, though highly obnoxious, garlic-like odour of cacodylic oxide was always early produced, and it constituted an additional obstacle to the prolonged use of cacodylate. These objections and inconveniences were, however, of secondary importance in view of the main result which had been arrived at—namely, that the compounds of cacodylic acid were apparently useless for producing the therapeutic effects of arsenic.

Dr. D. NOËL PATON contributed a paper on the Coördination of Medical Research in Edinburgh in which he noted the present waste of clinical material and the fragmentary character of the work done by individuals. He advocated the advantages of combination on definite lines of investigation with coördinated coöperation in supplying material and in prosecuting particular lines of work.

Mr. F. M. CAIRD showed (1) a girl after removal of an Intracranial Tumour; (2) a woman after partial removal of an Intracranial Tumour; and (3) a male patient, aged 68 years, after removal of a Portion of the Small Intestine for Tuberculous Intestine.

Dr. BYROM BRAMWELL showed (1) a case of Tabes with acutely developed ataxia in which great improvement had resulted from Frenkel's exercises; and (2) a case of Consolidation of the Left Lung, &c.

Mr. MILES showed a Splint which could be adapted for use as single or double inclined plane.

Card specimens were exhibited by Mr. CAIRD, Mr. WALLACE, Mr. MILES, and Dr. FLEMING.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF STATE MEDICINE.

Presidential Address.—Disposal of Old Surgical Dressings in Hospitals.

A MEETING of this section was held on Feb. 14th, Dr. NINIAN FALKINER, the President, being in the chair.

The PRESIDENT in his opening address gave a summary of the work of the Section of State Medicine for the 10 years during which he had acted as secretary. He then gave a short sketch of the birth and progress of the history of notification of diseases in England and presented a summary of the notification of certain infectious diseases in the cities of Dublin and Belfast, in the urban district of Rathmines, and the Pembroke urban district as published in the weekly reports of the Registrar-General for the year 1901.—Dr. J. CRAIG said that phthisis ought to be included in the list of infectious diseases to be notified to the public health authorities.—Mr. J. P. DOYLE said that syphilis ought to be included in the list of diseases to be notified for it was both contagious and infectious and modified all other diseases.—Mr. D. E. FLINN, Dr. T. DONNELLY, Dr. F. C. MARTLEY, and others also took part in the discussion.

Mr. H. GRAY CROLY read a paper on the Disposal of Surgical Dressings and other Refuse Matter in Hospitals. He considered that although surgeons took every care of the dressings that were put on their patients only a very small percentage asked what became of the used dressings. When many years ago he commenced practice, poultices, tow, and used dressings were too often pushed down the pan of the water-closet, and not infrequently they blocked the pipes, so that the closets were constantly being repaired. Some nurses stuffed them into unused corners until the morning cleaning came about, when they were carried off to the dust-bin to ferment and to rot until a scavenger carted them off. Every used dressing ought to be put into a covered bucket to be immediately destroyed in a quick-burning furnace. Lieutenant-Colonel J. Backhouse, I.M.S., informed him that in the military hospitals of Calcutta, Madras, and Bombay, all used dressings were placed in a pail which had a concave perforated lid covered with fresh carbon, and were at once carried out beyond the hospital grounds and burnt in a quick furnace. In the Rotunda Hospital and some others in Dublin the furnace was used, but it ought to be used in all hospitals.—Mr. R. F. TOBIN said that years ago, when he was at Netley Hospital, a farmer contracted for the hospital refuse and utilised it as a top dressing for his land. On one occasion when hunting he was thrown off his horse in a field so manured and fell into some of their old dressings.—Dr. CRAIG said that a used poultice that a nurse had left lying in one of the wards in the Meath Hospital was eaten by a child. There was the further risk of flies carrying the infection from old dressings.—The PRESIDENT, Dr. H. POTTER, and Mr. DOYLE also discussed the paper.

EPIDEMIOLOGICAL SOCIETY.—A meeting of this society was held on Feb. 21st, Dr. Patrick Manson, the President, being in the chair.—Dr. C. Killick Millard, medical officer of health of Leicester, read a paper on the Supposed Infectivity of Desquamation in Scarlet Fever. He said that the belief that infection persisted so long as desquamation was present on any part of the body was firmly held by the general public, by nearly all medical practitioners, and by many medical officers of health. On no other evidence than the mere fact of peeling and in the absence of any actual infection parents had been prosecuted for allowing convalescent children to be at large and hospital authorities had been charged with spreading infection by the premature discharge of patients, such accusations being always supported by the family attendant and often by the medical officer of health, though mostly avoided by the detention of patients for needlessly long periods, a system which increased the burdens

of the ratepayers and necessitated hospital accommodation in excess of the real needs of the district. This view was accepted without any qualification by the committee of the Clinical Society of London[1] for the investigation of incubation periods and the duration of infectivity in 1892 on, Dr. Millard held, insufficient evidence, desquamation having been mentioned in no more than three of the 209 cases of scarlatinal infection recorded in their report edited by Dr. Simpson, and they admitted that infection might occur long after desquamation had ceased. With a view to elicit the opinions of the most competent authorities he had sent a number of questions to 25 medical superintendents of fever hospitals, some of whom were also medical officers of health; 16 of these expressed in decided and almost identical terms their disbelief in the old doctrine, while nine gave a more or less uncertain and qualified adherence thereto. Dr. Millard believed that not only was there no positive evidence in favour of the old doctrine, but that there was much direct evidence against it. The streptococcus conglomeratus of Klein, which was very generally regarded as the specific microbe of scarlet fever, though present in the naso-pharyngeal mucus and in the urine, had not been detected in the cast-off cuticle, and the "striking distance" of scarlet fever was very short, though the dusty desquamation must be diffused far and wide through open windows; but there was no excessive incidence of scarlet fever in the vicinity of isolation hospitals, so that there was a strong contrast in this respect with the experience of small-pox hospitals. The supposed analogy between the scabbing of small-pox and the desquamation of scarlet fever was fallacious; pustulation, like suppuration, was evidence of the presence of bacteria, whereas erythema pointed to the action of a poison produced by bacteria in the organism rather than to that of the bacteria themselves, and erythemata produced by drugs were sometimes followed by similar desquamation. In his experience of several thousands of cases at Birmingham, and subsequently at Leicester, where the average period of detention did not exceed one month, the percentage of return cases following the discharge of patients still desquamating, though otherwise healthy, was certainly no greater than among others in whom it had ceased. Recrudescence of infectivity did not accompany a secondary desquamation, but it often followed the occurrence of a naso-pharyngeal catarrh induced by an ordinary chill, when the microbes were doubtless still present in the tonsils though until this accident in a dormant and inactive condition. It might be advisable to avoid this mishap by detaining patients for a day or two after their last disinfecting bath.—Dr. F. F. Caiger mentioned an instance of two return cases sent in 10 days after the discharge of a patient apparently perfectly well after eight and a half weeks in hospital.—Dr. C. B. Ker said that at Edinburgh patients were sometimes sent out after six weeks, but he preferred to keep them for eight weeks. The non-extension of the disease from hospitals as centres was, he thought, a very strong argument against the old view as to the infectivity of the desquamation.—Dr. F. M. Turner acquiesced in the traditional notion from prudential motives. Dr. Simpson's report appeared to be vitiated by his want of hospital experience and by his ignoring deferred infection.—Dr. J. W. Washbourn believed that there was no evidence whatever of the infectivity of the desquamation but that the period of infectivity of the patient might vary between three and eight weeks or more.—Dr. E. W. Goodall, Mr. Shirley Murphy, Dr. W. A. Bond, Dr. E. F. Willoughby, and the President also took part in the discussion.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on March 5th, Dr. Thomas Harris, the President, being in the chair.—Dr. J. Dreschfeld made some observations on Hodgkin's Disease and on Splenic Anæmia. He exhibited some patients to show the difficulty of clinically distinguishing between lymphadenoma and lymphosarcoma and drew special attention to the proportionate increase of lymphocytes in the former disease, though there might be no leucocytosis, as a distinguishing feature between the two. As regards splenic anæmia, this term included a number of affections which had only two symptoms in common—namely, anæmia and enlarged spleen. The splenic anæmia of children was often either a syphilitic or tuberculous affection; at other times the blood showed the character of pernicious anæmia. The splenic anæmia of adults, in which besides the anæmia and the large spleen there was usually severe and repeated hæmorrhage (epistaxis, hæmatemesis, melæna), was often only the early stage of Banti's disease, marked enlargement of the liver appearing at a later stage, though in several of the cases of splenic anæmia which were evidently cases of Banti's disease which were fatal during the early stage, as shown by the marked fibrosis of the spleen, the liver showed on post-mortem examination distinct signs of cirrhosis. Dr. Dreschfeld exhibited a male patient, aged 26 years, as a good example of Banti's disease. There was marked anæmia, the spleen and liver were very much enlarged, there was as yet no ascites, the patient suffered from repeated epistaxis which was checked quickly by adrenalin, and lately he had developed purpuric spots on the legs. Analysis of the blood gave the following result: erythrocytes, 3,540,000; hæmoglobin, 66 per cent.; leucocytes, 4200, with polynuclear neutrophile cells, 58·8 per cent.; small lymphocytes, 32 per cent.; large lymphocytes, 7·6 per cent.; and eosinophile cells, 1·2 per cent. The blood in this case showed, as in many of the reported cases of Banti's disease, a marked increase of the lymphocytes, though the total number of leucocytes was diminished as compared with normal blood. The increase of the lymphocytes might be of some use in distinguishing Banti's disease from other forms of anæmia. Attention was also directed to the splenic anæmia due to the malarial parasite, to the splenic form of Hodgkin's disease, and to the remaining small group of cases of anæmia in which the spleen was enlarged and the blood showed the character seen in chlorosis.—Dr. Charles H. Melland agreed, as the result of a considerable number of blood examinations in cases of Hodgkin's disease, including those shown by Dr. Dreschfeld, that the characteristic blood condition was one in which there was absence of leucocytosis, or even slight leucopenia, with, however, a relative increase in lymphocytes. There had been at least three cases of the type of splenic anæmia described by Osler in the infirmary within recent years, with the typical symptoms of enlarged spleen, anæmia, and profuse recurrent gastric hæmorrhages. Whether these should now be called Banti's disease he was not prepared to say. There was no evidence of any affection of the liver in any of them.—Dr. A. Hill Griffith made some remarks on the diagnosis and surgical treatment of Fronto-ethmoidal Mucocele and showed four patients who had recovered from this condition and had had displacement of the eyeball with diplopia and long-standing pain.—Mr. J. W. Smith showed a man, aged 35 years, on whom Excision of the Right Clavicle had been performed 13 months previously for a growth involving the inner two-thirds of the bone which had existed for five months. There was a history of precedent injury. At the operation adhesions between the posterior surface of the bone and the deeper structures presented the only difficulty. There were no signs of recurrence at the present time. As was usual in such cases the loss of the clavicle had made very little difference in the range of movement of the limb or in the symmetry of the shoulder, and the patient was now working as a labourer. The growth was a chondro-sarcoma, showing areas of hyaline cartilage of a cellular type separated by strands of fibro-cartilage and small cell infiltration, other portions consisting entirely of small round sarcomatous cells.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM.—A meeting of this society was held on March 3rd, Dr. Urban Pritchard, the President, being in the chair.—Mr. Hugh E. Jones (Liverpool) exhibited a Brain from a case of Cerebral Abscess in which a hernia cerebri developed three days after the abscess was opened; a fortnight later a portion of the hernia was removed and the abscess was again explored, but no pus was found. Death occurred three months after the operation.—Mr. Fagge suggested that the condition was not due to the removal of either too much or too little bone. He thought that it was accepted as being due to a local and spreading infection, either another abscess or a diffuse infection of cerebral tissues. In two cases of failure he thought that the best line of treatment by which he might have saved his patient would have been to have removed all the area of the brain superficial to the abscess, leaving the bottom of the wound simply the bottom of the abscess cavity, thus making a funnel-shaped excision of the brain tissue.—Mr. Jones also showed a Microscopic Section of a Neoplasm from the External Auditory Meatus. He considered the growth to be of the nature of a fibro-sarcoma. He also exhibited some Foreign Bodies removed from the Middle Ear; one was a piece of coal removed from the ear of a collier, who claimed

[1] THE LANCET, May 6th (pp. 1066 and 1080) and 13th (p. 1145), 1893.

compensation for injuries to his left ear whilst at work. As he professed to be totally deaf it was clear that he was exaggerating his symptoms. A few days after this piece was removed another piece of coal, which was not there on the first occasion, was found in the other meatus. Another case was that in which a man was absent-mindedly playing with a collar-stud while reading, and allowed it to slip into the ear. When seen it was completely jammed in the meatus, and an incision had to be made behind the ear in order to remove it.—The President remarked upon the damage done at times by the introduction of instruments into the meatus to remove foreign bodies.—Dr. Cresswell Baber showed a case of Malformation of the Auricle associated with Asymmetry of the Eustachian Tubes.—Dr. Herbert Tilley showed a girl, aged 15 years, in whom a large Exostosis of the Left Auditory Meatus had been removed, revealing extensive destruction of the left tympanum and mastoid antrum, although no urgent symptoms had at any time been complained of. The complete post-aural operation and ultimate skin-grafting had been carried out. Pus was also present in the right maxillary antrum.—Mr. Arthur H. Cheatle showed a case of Tuberculosis of the Temporal Bone in an adult. The operation wound had quite healed, but there had subsequently developed a tuberculous elbow and a tuberculous abscess in the back.—Mr. P. R. W. de Santi exhibited a case of Jacksonian Epilepsy following operation for temporo-sphenoidal abscess of otitic origin, and also a case of Complete Bilateral Deafness with Left Facial Paralysis due to syphilitic intra-cranial mischief of the nature of basal meningitis.—Mr. Macleod Yearsley exhibited two specimens of Pedunculated Exostoses. One was removed from the meatus of a man, aged 45 years, by means of a cold wire snare, and the other from the meatus of a woman, aged 21 years, with a pair of dental stump forceps.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on Feb. 19th, Mr. Arthur Oakes, the President, being in the chair.—Dr. J. Martin Young showed a case of Angeioma of the Eyeball occurring in a child, aged 14 years. Two and a half years ago the right eye presented a leash of deep-coloured vessels on the nasal side of the cornea under the conjunctiva. The nasal half of the retina was detached and very black. The condition was diagnosed as one of melanotic sarcoma and excision was advised, but the parents refused their consent. At the present time there was externally a large vascular dark-blue mass on the nasal side of the eyeball. There was only light perception. The patient had suffered no pain at any time. The left eye was normal. The long history was held to negative the diagnosis of sarcoma and the condition was now thought to be nævus of the choroid. There was no history of tuberculosis in the family. The child was well in other respects.—Mr. Jameson Evans showed a case of Mooren's Ulcer of the Cornea. The patient, a woman, aged 49 years, came under his care in March, 1901, suffering from marginal ulceration of the cornea in each eye. As the ulcers resisted all the usual topical and constitutional remedies it became necessary to cauterise them. At the end of two months and after three cauterisations the right eye was completely cured except for a diffuse marginal opacity of the cornea. The left eye, though subjected to varying treatment, including periodical cauterisations, had steadily, though somewhat slowly, progressed until only a central piece of cornea of about the size of the pupil was left uninvolved.—Mr. J. Furneaux Jordan showed a specimen of Myoma of the Uterus removed by supra-vaginal hysterectomy. The patient, aged 40 years, had been married 14 years. She had had no children and no miscarriages. Menstruation had been regular and the quantity was not excessive. Six months ago she had noticed a lump in the abdomen which had rapidly increased in size, especially during the first two months after she had come under observation. The specimen was a multinodular myoma. It was removed by Kelly's method, the broad ligament tumours being enucleated, one from above downwards, and the other from below upwards. The cervix was divided at the level of the internal os. The operation was performed on Jan. 15th, 1902, and the recovery had been good except for the formation of a stitch abscess at about the eleventh day.—Dr. F. Edge read a paper on the Treatment of Abortion.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on March 7th, Dr. Arthur T. Davies, the President, being in the chair.—Dr. E. W. Goodall opened a discussion on the Treatment of Typhoid Fever. During the fever stage, he said, feeding with milk three parts and water one part in quantities varying from two to three pints was ordinarily sufficient. If with this feeding the stools were lumpy and that was not remedied by diminishing the quantity of milk or increasing that of water the milk should be pancreatised before it was given. A week after the fever was over, and when the motions were not loose, solid food such as pounded fish and thin bread-and-butter might be allowed. As a stimulant he preferred spirit of camphor to alcohol. Of baths he favoured those of a temperature of from 75° to 80° F., and in winter 90°, allowing the immersion for 10 minutes up to 20 minutes. He thought that the benefit was not only that of a reduced body heat and he quoted the observation of Roque and Weill that the toxicity of the urine was increased during the treatment of Brand. The value of intestinal antiseptics was open to much doubt, though the fœtor of stools might be reduced by mercuric chloride or resorcin. Hæmorrhage should be treated by the avoidance of food by the mouth, the use of ice to the abdomen and full doses of opium, while the extremities were wrapped in cotton-wool. If perforation occurred, as soon as that was diagnosed, collapse not being present, laparotomy should be performed. In all cases needing catheterising urotropine should be given, as it should also if cystitis had developed.—The President said that mortality statistics at different periods were of but little help to treatment because of the variable intensity of the fever at different times.—A general discussion followed, to which Dr. Goodall replied.

Reviews and Notices of Books.

Anticipations of the Reaction of Mechanical and Scientific Progress upon Human Life and Thought. By H. G. WELLS. London: Chapman and Hall, Limited. 1902. Pp. 318. Price 7s. 6d.

The Discovery of the Future. A discourse delivered to the Royal Institution. By H. G. WELLS, B.Sc. London: T. Fisher Unwin. 1902. Small 8vo, pp. 95. Price 2s.

WHITHER? This question, applied to the individual man and his destiny, has proved from the earliest historic time to be of absorbing interest, but as applied to the genus man, so far as we can judge, it has attracted, until quite recent times, but little notice and has awakened hardly any interest. Here and there a patriot has worked for the future of his country, now and again a philanthropist has taken a long look ahead at the wellbeing of posterity, but intellectual curiosity has seldom in the days before our own found scope for its exercise in the shadowy future, not of a free imagination, but of a fettered and strictly scientific forecast. Mr. Wells has made the experiment of a dip into futurity upon these terms and his success amply justifies his ambition. We speak in this connexion of his success without in any sense subscribing to his conclusions. It would be difficult either to endorse or to repudiate them in a word. They are so many and so diverse that unreserved acquiescence and uncompromising divergence of view are equally out of the question, nor, indeed, is the conclusion which is reached along any of the many lines which Mr. Wells follows in our opinion a matter of great consequence. We find ourselves differing from him and agreeing with him with equal composure. The mental exercise is the delightful thing and of this Mr. Wells gives us abundance. His argument is always ingenious, his information is copious, and his conclusions, right and wrong, are all suggestive and of the thought-compelling order. It is both a refreshing and an invigorating exercise to turn our history upside down and to argue in inverse order from the earlier to the later stage, from cause to consequence.

But while Mr. Wells gives us the impression of a very ingenious and powerful writer who has much to say that merits consideration he gives us an impression also of the inadequacy of the scientific method to the creative task of working down, as we have said, from cause to consequence.

It is like navigation upon what sailors call dead reckoning. In working up from ascertained facts to their causes we have the lode-star always in view, a fixed point by which we can at any moment try our course and ascertain our position. But working the other way we soon feel how low is the measure of certainty to which it is possible to attain when every deduction takes us further from, not nearer to, our ascertained facts. For this reason those parts of Mr. Wells's book appear to us to be of least interest in which he seeks to draw a moral and to prescribe an object to our collective action. For example, he is very urgent that we should take measures to extend in India and elsewhere the use of the English tongue. His intention is admirable, his discussion of the possibilities of what we may perhaps call "linguistic preponderance" is very illuminating, but he has not even considered the elementary question whether effort intentionally and manifestly directed to that end would not defeat its own object. There is something a little German, if we may say so without offence to him or to our continental neighbours, about the directness and simplicity of his method of influencing his fellow-men. It hardly seems to have occurred to him that where the voluntary action of free men is concerned the art of moulding their conduct consists largely in concealing the artifice by which it is done.

In "The Discovery of the Future" Mr. Wells continues to anticipate. His theories are very plausible and it will be interesting for those who are here now when they enter upon the next life to see, if it be possible for those who have passed from this world to know what happens in it, the fulfilment or otherwise of Mr. Wells's speculation.

A Manual of Practical Anatomy. By the late Professor A. W. HUGHES, M.B., M.C. Edin., F.R.C.S. Eng. Edited and completed by ARTHUR KEITH, M.D. Edin., F.R.C.S. Eng. In Three Parts. Part I.: The Upper and Lower Extremities, pp. 274, with 38 Coloured Plates and 116 Figures in the Text, price 10*s.* 6*d.* Part II.: The Abdomen and Thorax, pp. 308, with Four Coloured Plates and 151 Figures in the Text, price 8*s.* 6*d.* London: J. and A. Churchill. Demy 8vo. 1901.

THE authors have wisely determined to issue this manual in three volumes of very convenient size. Two of these, dealing respectively with the Upper and Lower Extremities and with the Abdomen and Thorax, are now issued. The work, which bears the name of the late Professor A. W. Hughes, was incomplete at his death and has been ably completed by Dr. Arthur Keith.

The book is profusely illustrated. Some of the illustrations are old friends and are much the worse for wear, whilst others are quite new. The first part contains a large number of process reproductions of coloured drawings of the dissections in the Alfred Hughes collection at King's College. These are very disappointing, and being printed on thick paper they materially add to the weight and size of the volume. Perhaps this accounts for the absence of similar illustrations in Part II. The osteological plates showing muscular attachments are most useful and complete; they are erroneously attributed in the preface to Holden, whereas they are really woodcuts prepared under the supervision of Professor H. E. Clark, C.M.G., for Wilson's "Anatomist's Vade Mecum." Such illustrations as these are undoubtedly a great convenience to the student. Some diagrammatic outlines, showing the relations of the abdominal viscera and the vessels, nerves, and fasciæ of the pelvis, will prove particularly useful and are quite one of the best features of the book. We notice, however, that the position of the splenic vein in Fig. 166 does not correspond with that more correctly given in the text.

The various sections of the book are well arranged and the directions for dissections are lucidly given. The style is very terse, and in some places we are sure that the first year's student will not grasp the authors' meaning. Brevity can be cultivated at the expense of lucidity. But on the whole the brevity of description is a good point, as books of this description should only be guides to what the dissector must see for himself. Considerable care has evidently been taken in the description of the soft parts of the pelvis. The method of description of the pelvic fascia is clear but too concise; it departs in method somewhat from the description usually in vogue. An instructive diagram of the ovarian triangle has been inserted and particular care has been taken in giving the relations of the ureter.

When will pure anatomists begin to give a rational description of the actions of muscles? What the student and the clinician want to know is not what a muscle might conceivably do under inconceivable conditions but what it does in everyday life. There is no excuse for the continued ignorance manifested on this subject. The foundation for an accurate knowledge was laid by Duchenne in 1867 and a wealth of clinical material has accumulated since. This book perpetuates many of the old misstatements on this subject.

The War Against Consumption. By E. DENNIS VINRACE, M.R.C.S. Eng., L.S.A.; Revised by JOHN H. VINRACE, M.B., M.R.C.P. Lond. London: Century Printing Co., Limited. 8vo. Pp. 178. 1901.

THIS is a popular handbook of the proceedings of the British Congress on Tuberculosis which was held in London in the latter part of July, 1901. The author was the representative of the Kensington Royal Borough Council. The book is a *résumé* of the opinions expressed by some of the authorities at the congress, with comments and explanations by the author, and it is intended to propagate among the general public accurate information concerning the present state of medical knowledge as to the origin and treatment of tuberculous disease. We wish the book a wide circulation, for it is certainly suitable for general reading, and can be understood by all. We are pleased to find that Dr. John Vinrace strongly discourages the idea that a suitable climate for every consumptive patient cannot be found in our own country. "I may assert," he writes, "without fear of contradiction that in a very large proportion of cases it is greatly to the patient's advantage to be treated here, rather than in some foreign land." We believe the information to be accurate and sound, and no one will fail to remark the unassuming modesty and quiet firmness of the author's views. We quite agree with all that is here advanced on the subject of climatic treatment, and we think that the chapter on the Open-air Sanatorium is excellent. The last chapter in the book is devoted to a consideration of the advantages that may be expected to accrue from the results of the deliberations of the congress. "There could be no greater mistake than to suppose that the discussions ..... are not likely to have any practical outcome, and that its work has been merely of academic importance." What the directions are which our efforts to suppress the disease should take are summed up under 12 headings, and the author really seems to think that the *laissez-faire* attitude so general in this country is being abandoned, and that the whole nation will take up arms in the war against tuberculosis. We only hope that it may be so, for the time for action is surely now.

The Theory and Practice of Medicine. By HENRY WALTER SYERS, M.A., M.D. Cantab., &c., Senior Physician to Outpatients to the Great Northern Central Hospital. In two volumes. Vol. I. London: Rebman, Limited. 1901. Pp. 633. Price 15*s.*

THE author informs the reader in the preface that in this work he has attempted to describe the chief facts which underlie a knowledge of the principles and practice of

medicine. We have carefully perused this volume, but we cannot say that we have been favourably impressed. We perfectly agree with Dr. Syers that in a book dealing with the principles of the subject all matters which are superfluous should be omitted, and that amongst such matters are long disquisitions on morbid anatomy which it is impossible for the student to understand unless he has large post-mortem experience. Dr. Syers has, however, gone too far in this curtailing process, with the result that in our opinion the book will be of little use to the student in preparing for examination, and the practitioner will find little to guide him in the conduct of an obscure case, especially if the diagnosis is in doubt. The subject of differential diagnosis is but very briefly touched upon. Take, for instance, the chapters on small-pox and chicken-pox, some of the most important diagnostic differences are omitted, whilst in a doubtful or modified case of small-pox we are afraid that Dr. Syers's observations would not be of much value to the perplexed practitioner.

The author acknowledges that but brief attention has been devoted to treatment by drugs, but he excuses the omission by stating that the proper details of therapeutics should be sought in books devoted to that subject. We do not agree altogether with this statement. The busy practitioner does not wish to search through a volume on therapeutics in which several methods of treatment are suggested for any one disease, but he requires a volume on medicine stating the opinion of a physician of experience who has already tried the various plans suggested and has come to a conclusion as to which is most likely to give satisfactory results. Further, Dr. Syers entitles his book "the Theory and *Practice* of Medicine," which surely includes a knowledge of drugs.

We regret that we cannot congratulate Dr. Syers on the results of his labours. The book is lacking in the details which are necessary in a text-book on general medicine.

LIBRARY TABLE.

The Literary Year-Book and Workman's Directory, 1902. Edited by HERBERT MORRAH. London: George Allen.—The sixth issue of the "Literary Year-Book" shows a considerable advance upon previous issues. The directory of authors, which forms the bulk of the book, is a valuable compilation. It is a long list containing the names of the best known writers and of many others accompanied by a certain amount of authentic information as to their work. The directory is, of course, not complete, and it never will be complete, for the difficulty of defining what constitutes an author is considerable and there are sure to be regrettable omissions and inclusions. Some writers, also, are much more communicative than others as to their personal affairs, so that the assistance received by the editor has been, and will be in all future editions, very capricious. We notice that a few medical writers find a place in the directory, but here no principle seems to have been followed, for we looked in vain for the names of Sir Lauder Brunton, Sir Frederick Treves, Professor Osler, Dr. F. Taylor, Dr. Playfair, Dr. Galabin, Mr. Henry Morris, Mr. William Rose, and Mr. D'Arcy Power—to mention a few whose literary work is familiar to our readers. The editor's summary of the year's work of 1901, which is written in the confident manner of an able man, contains much that is true and much that is debateable, but medical authors are not largely concerned in the conditions of general authorship. If they require advice as to the best methods of publishing, as to the meaning of their agreements, or as to the fairness of any royalty that is offered to them, they will do well to consult the Society of Authors.

The Climate and Mineral Waters of Caledon, South Africa. By G. W. B. DANIELL, M.R.C.S. Eng., L.R.C.P. Lond., Medical Superintendent, Caledon Mineral Baths Sanatorium. London: John Bale, Sons, and Danielsson. 1902. 8vo, pp. 54. Illustrated.—This is a reprint, with additional matter, of a paper published in our contemporary the *Journal of Balneology and Climatology* in October, 1901. The book is well bound and clearly printed and contains six photographic views of Caledon and the sanatorium. Caledon is a village situated on the southern aspect of a range of mountains within easy distance of Table Mountain and Cape Town. There is at present no railway from Cape Town, and this is a great disadvantage, as it renders a five hours' drive in a Cape cart necessary, and Cape carts are not the most comfortable of vehicles. Still, it is possible to hire a better carriage for the drive, and it must be conceded that the roads are good. The village itself is at an elevation of about 850 feet above the sea-level. The climate of this neighbourhood is equable and dry; the mean annual temperature is 62·3° F. and the mean annual rainfall is 20 inches. There are no "dust-storms" in this part of the colony and frost is almost unknown even in winter nights. It is claimed for the climate of Caledon and its neighbourhood that it is bracing and never too hot, as is Cape Town, which lies, of course, on the sea-level. The springs of Caledon, seven in number, are thermal and chalybeate, rich in ferrous carbonate, and unusually free from organic impurities. Professor P. D. Hahn and Professor J. Attfield have made analyses which will be found recorded in detail in the book. The total yield of water every day is about 180,000 gallons, and at the mouths of the springs the temperature of it is about 120° F. We are glad to be able to record that we know people who have been greatly benefited at Caledon Baths, and from a knowledge of the local climate we are quite in agreement with Mr. Daniell that patients with rheumatism and Bright's disease may expect to do well there. The waters are not unduly astringent, though chalybeate, and are non-irritating to the digestive tract. "It has been remarked," writes the author, "that there is quite a 'boom' in sanatoriums at the Cape. Show me a country more in need of such establishments, and one of more natural advantages, and I will admit that the 'boom' should not exist." This is all very well, but a sufferer need not go so far as South Africa to be relieved of rheumatism or Bright's disease, of anæmia, or the malarial cachexia. There is too much going abroad to seek after health and we too often ignore the natural resources of our own little island. There are thermal chalybeate springs in Great Britain every whit as good as those anywhere in Cape Colony, if chemical analyses and records of improved health are anything to go by.

Woman's Best Work and Latent Capabilities. By FREDERICK JAMES GANT, F.R.C.S. Eng. London: Elliot Stock. 1902. Pp. 107. Price 2*s.* 6*d.*—Those familiar with Mr. Gant's former works, "Perfect Womanhood" and "The Latest Fruit is the Ripest," will find in the little book now before us some further details as to Sister Eva. We somehow have not much faith in spiritual unions between two ordinary carnal mortals such as were Algernon and Eva. However, Algernon did not survive very long, which was, perhaps, the best way out of the difficulty. Eva and Algernon are considered in Chapter I. The rest of the book is taken up by remarks upon woman's work in the spheres of hospital nursing, rescue work, and the like, and Mr. Gant writes with all his well-known heart-whole enthusiasm as to women medical practitioners.

Women in Love. By ALFRED SUTRO. London: George Allen. Pp. 284. 1902. Price 6*s.*—The sub-title of Mr. Sutro's book is "Eight Studies in Sentiment" and the tendency of six studies out of the eight is to show that happiness is not acquired by going outside the conventional bounds set for the regulation of sexual relations. From our narrow point of view as medical journalists we are glad that of the two couples who seem likely to be happy Dr. Rogers and Vivien Meadows have to all appearances a

blissful future before them. For the rest, women in love seem to have anything but a good time. Mr. Sutro's little sketches are pleasantly written and if there is nothing very new about his presentment of a theme as old as the world yet his book affords half an hour's interesting reading.

The British Sanatoria Annual. London: John Bale, Sons, and Danielsson, Limited. 1902. Pp. 158. Price 2s. 6d.—This little book, now in its third year of publication, gives an account of the various sanatoriums existing in the British Isles for the open-air treatment of tuberculosis. To judge by the many communications which are addressed to us upon this matter the existence and whereabouts of sanatoriums in Britain are but little known. The current issue of the book contains some abstracts of papers read at the Congress on Tuberculosis held in London in July, 1901. Altogether the compilation will be found very useful.

The Fish River Bush, South Africa. By W. T. BLACK, M.R.C.S., L.S.A. Edinburgh and London: Young J. Pentland. 1901. Pp. 55.—This volume is a reprint of articles contributed by the author to the *Edinburgh New Philosophical Journal* for July and October, 1853. They are founded on personal observations made by him when serving as assistant surgeon in the Caffre wars of 1847 and onwards. Everything about South Africa is of interest at the present time, and though no doubt vast changes have occurred in the country which Mr. Black describes, yet a detailed account of such a curious country is well worth reading. The bush as described is an almost impenetrable jungle consisting of thorny shrubs and small trees. Probably there is but little left of it now. Mr. Black gives some notes of the commoner animals which were found at the time of his observations within its fastnesses. As a record of, we should imagine, an almost vanished state of things we are glad to see these papers reprinted in an accessible form.

Radiothérapie et Photothérapie. By Dr. L. R. RÉGNIER. Paris: J. B. Baillière et Fils. 1902. Price 1 franc 50 centimes. Pp. 92.—This is a volume of the excellent little series of books known as "Actualités Médicales." Dr. Régnier commences by a survey of the theories of light and the various observers who have contributed to the solution of the problem. Though he mentions Huyghens and Fresnel we notice that he omits the name of Thomas Young who confirmed the wave theory of the former and discovered interference some 14 years before Fresnel wrote upon the subject. The author then considers the relations between energy existing as light, heat, and electricity. The more purely medical part of the book deals with the physiological effects of light-rays and of x rays. The various apparatus for applying these remedial agents are described and finally Dr. Régnier deals with the therapeutics of radiant energy in its different forms. The book is a simply and plainly written statement of the main facts of our knowledge of the subjects contained in it.

Burdett's Hospitals and Charities, 1902. London: The Scientific Press, Limited. Price 5s. Pp. 992 text; indices, viii.—This valuable compilation is quite up to its usual form and we need say little more. One new feature is a list of private sanatoriums for the treatment of tuberculosis. Another feature special to this year is the introductory chapter headed "Monarchy People and Hospitals." In this Sir Henry Burdett lays stress upon a point too often forgotten, that the London hospitals are not merely metropolitan institutions but Imperial institutions in that they receive patients from all districts of the Empire. Hence the Coronation gift should be contributed to by all classes and nationalities of the Empire.

VACCINATION GRANT.—Dr. P. L. Benson, Steeple Claydon, Bucks, has obtained the Local Government Board grant for successful vaccination for the eighth time in succession.

Analytical Records
FROM
THE LANCET LABORATORY.

NEWSHOLME'S PORTABLE AMMONIUM CHLORIDE INHALER.

(G. T. W. NEWSHOLME, 27, HIGH-STREET, SHEFFIELD.)

THIS handy little apparatus is constructed on simple lines. It is easily charged and easily kept clean. It consists simply of a wide glass tube closed at one end and fitted with a rubber cork at the other. A thistle-shaped funnel is fitted into the cork, the funnel being inverted and being suspended over a sponge at the bottom of the tube. A glass tube also fitted into the rubber cork serves as the inhaler tube. The funnel contains glass wool for absorbing the hydrochloric acid and the sponge is to be moistened with ammonia. On exhausting the inhaler tube air enters the thistle funnel and leaves the glass wool saturated with hydrochloric acid; it then impinges upon the ammonia sponge so that fumes of chloride of ammonium are formed which may be inhaled. Simplicity of construction is a decided advantage in an inhalation apparatus in order that it may be kept clean and in a satisfactory working state, and this is so with Newsholme's inhaler.

VIROL.

(VIROL, LIMITED, 152 TO 166, OLD-STREET, LONDON, E.C.)

Virol is now manufactured on the large premises of the Bovril Co. We have submitted it to analysis on a previous occasion, but it has recently been improved in certain important respects. It is essentially a preparation of marrow fat and active malt extract, the fat not existing apparently as a separate entity until water is added, when an emulsion is formed exhibiting fat in an exceedingly fine state of division—a form in which it is readily absorbed and appropriated. Marrow fat, as is well known, contains natural glycero-phosphates which exercise a remarkably favourable effect upon the nutritive processes, especially in wasting diseases. Virol readily digests starchy compounds. According to our analysis it has the following composition: water, 29·37 per cent.; fat, 10·98 per cent.; proteids, 3·78 per cent.; malt extractives, 54·32 per cent.; and mineral matter, 1·64 per cent. The mineral matter proved to be rich in phosphates. The substitution of virol for cod-liver oil is grounded on a reasonable basis, considering its nourishing and tonic constituents and the particular way in which they are combined. Moreover, the flavour is attractive and the ingestion of virol is not followed by disagreeable eructations, as is the case with ordinary cod-liver oil.

CASUMEN BREAD.

(PRIDEAUX'S PURE CASEIN AND LIFE FOOD CO., LIMITED, MOTCOMBE, DORSET.)

The addition of soluble milk casein to bread must necessarily raise its food value in direct relationship to the amount added. We have examined specimens of bread containing respectively 5 per cent. and 10 per cent. of casumen. The bread was of excellent texture and of good flavour and possessed remarkable keeping qualities. The casumen loaves kept moist and plastic for over a week and after that time were still "new" as regards flavour. The casumen is dissolved out easily by hot water. In experiments directed to the determination of the digestibility of the bread, using acid pepsin, the percentage amount of total proteids digested was the same in regard to ordinary bread and casumen bread, but the actual gain of proteid is as much as 65 per cent. when bread containing 10 per cent. of casumen is substituted. This, of course, is an indisputable dietetic gain, the flesh-forming constituents

in casumen bread being nearly double those contained in ordinary bread.

CASUMEN BISCUITS.

(W. DUNMORE AND SON, MIDLAND BISCUIT WORKS, SOUTH WIGSTON, NEAR LEICESTER.)

It is stated that these biscuits contain 10 per cent. of soluble milk casein (casumen). This statement is completely confirmed by our results of analysis which showed the presence of 19·33 per cent. of proteid. Since biscuits made with ordinary flour contain about 10 per cent. of proteid, the addition of absolute casein to the bread amounts to 9·33 per cent. Warm water easily dissolves the added casein which readily yields to the digestive action of pepsin. The biscuits are somewhat dry to the taste but are crisp and of good texture. They have, however, a decided tendency to crumble. According to analysis they are 100 per cent. more nourishing than the ordinary milk biscuit, while they are better entitled to the name since they contain pure milk proteid in rich proportion.

ROWNTREE'S ELECT COCOA AND SWISS MILK CHOCOLATE.

(ROWNTREE AND CO., LIMITED, COCOA WORKS, YORK.)

We have examined this cocoa and find it to be of excellent quality with more than half of the indigestible cocoa fat removed and possessing a maximum degree of so-called "solubility." It leaves little or no sediment in the cup as the result of a special method of manufacture. On account of this method the mineral matter was rather excessive, showing a degree of alkalinity equivalent to 2·77 per cent. potash (K_2O). The cocoa possesses a fine aromatic flavour. The moisture amounted to 5·3 per cent. and the fat to 29·25 per cent. We have received also specimens of Swiss milk chocolate from this firm. The combined flavour of cream and cocoa is agreeable. The chocolate is very nourishing and is a useful and portable article of food.

TABLOID ASPIRIN.

(MESSRS. BURROUGHS, WELLCOME, AND CO., SNOW-HILL-BUILDINGS, LONDON, E.C.)

Aspirin is an acetyl derivative of salicylic acid which is said to offer advantages over the acid or its salts in the treatment of rheumatic conditions. The tabloid contains five grains of aspirin, a white crystalline compound.

PURE FRUIT SYRUPS.

(JOH. STOKHUYZEN, HOLLAND; LONDON AGENCY, S. DUSSELSMA, CENTRAL CHAMBERS, 17, CHEAPSIDE, E.C.)

As might be expected, these syrups consist chiefly of sugar varying in amount from 74 per cent. to 85 per cent. According to some tests which we made we believe them to be genuine fruit syrups without foreign colouring matter. Moreover, they possess the true flavour and aroma of the respective fruits. We examined the cherry, strawberry, and raspberry syrups. In spite of the preponderance of sugar the manufacturers evidently find the addition of a small quantity of salicylic acid for preserving purposes necessary.

TOILET REQUISITES.

(THE TOILET NOVELTIES CO., BRISTOL.)

These "requisites" are important to personal hygiene. The aseptic handkerchiefs in the large form are composed of Japanese paper, the material being known as silky fibre, a by no means inappropriate term. They are beautifully soft and possess the important quality of being highly absorbent. They are strongly bibulous—a property which renders them well adapted for the reception of sputa or mucus, as in infectious colds or tuberculosis. The handkerchiefs are bordered with a pattern resembling the embroidery of an ordinary pocket-handkerchief. Other toilet requisites consist of sanitary paper in the form of a household toilet-book, or of a toilet pocket-book, containing readily detachable papers made, it is said, from chemically pure paper. Several sizes of pocket-book are made supplied with a stiff cover, fastening much in the same way as an ordinary leather pocket-book. Each leaf may readily be withdrawn without disturbing the remainder. These requisites will be appreciated by travellers and especially by those who travel abroad. They are inexpensive and add little to impedimenta. The use of any common paper for toilet purposes is an objectionable and insanitary practice.

New Inventions.

THE "CORTLAND BROUGHAMETTE."

THE day of the general adoption of the motor-car for professional requirements being not yet, we still are dependent mainly upon horse traction to supply our needs. The Cortland Wagon Company, of Henrietta-street, Covent Garden, W.C., are not, apparently, impressed with the idea that we shall quickly see a change in this latter method, as they have invited us to inspect their "Cortland Broughamette," which they have specially designed for the medical profession, and in the construction of which they have endeavoured to combine all the best English and American features. The broughamette is hung on highly-tempered steel

The "Cortland Broughamette."

springs of a special character and is tyred in solid rubber. Every effort has been made to prevent vibration and "chattering," with excellent results, and both hum and rattle are banished. The body is very roomy and comfortable, its upholstering is in good taste combined with utility, and the fittings are in keeping with those obtaining in the best vehicles. The new broughamette is extremely light, weighing but five and a half hundredweight, this lightness being attained by the use of special materials in its construction which insure the strength as well as lightness of the vehicle.

ASYLUM REPORTS.

London County Asylum, Cane-hill (Report for the year ending March 31st, 1901).—The average number of patients resident during the year was 2215, including 947 males and 1268 females. The admissions during the year amounted to 440—viz., 264 males and 176 females. Of these 370 were first admissions. Mr. James M. Moody, the medical superintendent, states in his report that "a large proportion of the admissions were unsatisfactory in regard to the prospect of recovery—viz., 50 per cent. of the females and 67 per cent. of the males." The number of patients discharged as recovered during the year amounted to 150—viz., 80 males and 70 females, or 6·8 per cent. of the average number resident. The deaths during the year amounted to 190—viz., 130 males and 60 females, or 8·5 per cent. as calculated on the same basis. 15 males and 88 females died from pulmonary tuberculosis. "Endeavours are now being made," adds Mr. Moody, "to isolate phthisical cases, and the open-air treatment will be carried out as far as possible." The general health of the institution has been satisfactory during the year, no epidemic or zymotic disease having prevailed. 11 patients escaped, and of these nine were re-taken and brought back. Two female patients admitted while pregnant were safely delivered, one prematurely and the other at full term. New works have been undertaken in connexion with softening of the water-supply and the drainage of the isolation hospital, attendants' cottages, and farm. The Commissioners in Lunacy state in their report that the general condition of the asylum was very satisfactory, the wards and day-rooms were bright, cheerful, and comfortable, the dress of the patients was neat and tidy, and that the medical case-books were well kept and illustrated with excellent photographs of patients. The expenditure on repairs and alterations during the year amounted to £5343.

THE LANCET.

LONDON: SATURDAY, MARCH 15, 1902.

The Leicester Guardians and Vaccination.

THE appeal in the case of MOORE *v.* KEYTE disposed of by the Divisional Court last week was of importance because if the contention of the Leicester Guardians, whose conduct was in issue, had been held to be correct, the Vaccination Acts would have been liable to be abrogated in any locality at the pleasure of the guardians of the poor for that locality. This result, it will be remembered, the Leicester Guardians endeavoured to bring about in 1899 by appointing as vaccination officer a person holding their own views as to the undesirableness of vaccination. The Local Government Board refused to sanction the appointment and the intervention of the court compelled the appointment of a person who would carry out the duties of his position, and eventually such a person was duly appointed and approved by the Board. The policy since adopted by the Leicester Guardians was exhibited in a resolution passed by them condemning the action of their new vaccination officer in prosecuting offenders under the Vaccination Acts without the guardians' instructions, and instructing him in future to report defaulters to the Board so as to afford them an opportunity to offer a reasonable excuse. Section 29 of the Vaccination Act of 1867 provides that "every parent or person having the custody of a child who shall neglect to cause it to be vaccinated ..... and shall not render a reasonable excuse for his neglect shall be guilty of an offence, ..." but the view that the excuse might be offered to guardians and not to the magistrates hearing summonses for neglect to vaccinate was, we believe, first suggested by the ingenious guardians of Leicester whose resolution referred to went on to say that the authority to prosecute, if given by them, would be given under their common seal. On two occasions, in compliance with the terms of this resolution, the Leicester vaccination officer presented lists to the guardians of persons whom he deemed it desirable to prosecute, and on each occasion resolutions promptly followed instructing him to take no further steps with regard to the institution of proceedings until instructed by the guardians. No instructions to prosecute were ever given, but the vaccination officer took proceedings nevertheless and secured the conviction of an offender, the appellant in the present case. The ground of appeal was not only the absence of authority from the guardians to prosecute, but also the absence of proof by the vaccination officer that the public vaccinator had given the prescribed notice of his intention to visit the house of the person summoned, and that he had, in fact, so visited and offered to vaccinate the child.

Mr. RAWLINSON, K.C., argued the appeal from the point of view of the Leicester Guardians and their supporters The Attorney-General claimed to be heard on behalf of the Local Government Board on the ground of the important public interests involved affecting the duties of that department. The court heard Sir ROBERT FINLAY on these grounds, expressly intimating that it did not do so on account of any serious doubts felt by it on the subject of the appeal, and counsel for the respondent was not called upon to argue. There were two points, as we have indicated, for decision, the first and most important being, as expressed in the case stated by the magistrates, whether the vaccination officer by virtue of his appointment as such, without directions, general or special, from the guardians, at any time and notwithstanding the guardians' direction not to prosecute in certain specified cases, could institute proceedings under the Vaccination Acts of 1867 to 1898 as vaccination officer of the guardians. On this point the judgment delivered by Lord ALVERSTONE was clear and decisive. He held that it was for the magistrates when the case came before them, and not for the guardians, to decide what was a reasonable excuse for the non-vaccination of a child, and he had no doubt whatever that it was the duty of the vaccination officer to take proceedings independently of the wishes or instructions of the guardians. To this conclusion his lordship would have come under the wording of the Vaccination Act of 1898, but he added that the wording of the order of the Local Government Board published since the passing of the Act made the matter more abundantly clear. The case of BRAMBLE *v.* LOW decided a similar point under Section 31 of the Vaccination Act of 1869 and the orders of 1874 in similar fashion. The true view was that the vaccination officer was bound to obey the order of the Local Government Board and that any order of the guardians contrary to that order would not be a legal order or one that the vaccination officer would be bound to obey. On the second question—namely, whether it was a condition precedent to a prosecution by a vaccination officer under Section 29 of the Vaccination Act, 1867, that due proof must be given of the public vaccinator having previously given notice of a visit and having visited the house—the Lord Chief Justice held that the absence of the visit and notice might well be urged before the magistrates on the hearing of a summons and might be treated by the magistrates as a reasonable excuse for non-compliance with the Act, but that this was a long way from the proposition that the onus of proving the performance of such matters lay upon the prosecution.

With regard to both questions involved in the case of MOORE *v.* KEYTE there is, therefore, direct judicial authority unless and until some new Act of Parliament intervenes. We say this because we notice that a private Member, with a promptitude worthy of a better cause, has already introduced a Bill in the House of Commons which provides that no prosecution under the Vaccination Acts shall be commenced without the authority of the guardians. Fortunately, in some cases at all events, the efforts of the private Member to legislate are not frequently or rapidly crowned with success. That which has not been decided, but will, we apprehend, some day occupy the courts, is whether guardians are liable to pay the costs of unsuccessful prosecutions instituted without their sanction and contrary to their instructions by their vaccination officer. If it is decided that the guardians are so liable the whole matter will be concluded.

A Plea for the Study of Minor Ailments.

THERE are several striking features by which the medical and surgical practice of hospitals is contrasted with what is called private practice. At first sight it might seem strange that where the aim in each instance is the same the conduct should often be so different. To the hospital physician and surgeon, as to the general practitioner, the first object is the improvement of the patient's malady. How comes it, then, that the means by which improvement is secured are often so far removed in the institution from those which prevail outside it? A main cause for this difference is at once apparent when we consider the patient's malady. No revelation is more perplexing to the young practitioner fresh from hospital work than this—the majority of his patients seek his aid on account of ailments which were not seen, or were thought of little account, in hospital work. Instead of finding that for every case with which he is confronted he can at once remember a parallel supplying him with confidence in his treatment of his patients, he realises to his surprise that now for the first time he is called upon to deal with some common ailment of which he has often heard, from which, indeed, he may have suffered, but to which he has never had his attention directed during his days of pupilage. His ingenuity in devising suitable treatment becomes at once subjected to a severe test. Qualities are asked of him for which he has hitherto had little need, and thus it happens often that coolness and tact, if based on sufficient knowledge, may lead the practical young man to early success that may be denied to the "best man of his year" who, with a large amount of definite knowledge, lacks the accessory qualities which permit this to be brought into play in private practice.

Recent correspondence in our columns on the treatment of the common cold and the removal of the unsightly wart would in itself suffice to show how great an interest for practitioners may centre round a subject which the text-book or the lecturer on medicine passes by with a word or two. Minor ailments are common ailments. Common ailments provide the bulk of practice; while it is rare cases that loom large in the student's eye, and it is mainly from the exceptional instances that his teachers provide their lectures and demonstrations. Yet these common ailments should provide as much food for reflection as the most elaborate medical problem. The common cold is not more easily explained than the etiology of pernicious anæmia, and Friedreich's hereditary ataxia is almost as amenable to treatment as a simple headache in certain persons. Yet hundreds of pathologists and bacteriologists probably busy themselves about the more high-sounding diseases, for every one who attempts to unravel the equally obscure problems of a so-called simple complaint. This is a practical error, for surely that disease which affects the largest number ought to be grappled with first. The grave diseases have, of course, grave results—a fact which gives them their appearance of overwhelming urgency—but the results of the lesser maladies when they become recurrent in the same individual, as they so often do become, are not to be despised. From the point of view purely of the medical man minor ailments have a peculiar interest denied to the rarer or more serious classes of disease. The latter may be met with in hospital and out of it, but are best studied by those in attendance in institutions where in a few weeks as many instances may be seen as a general practitioner would meet in his lifetime. With the common and slight ailments just the reverse is the case. These are, so to speak, the general practitioner's field. It behoves him, then, who has charge of this estate to reap from it a harvest of information whereby his own patients may gain in treatment and the whole profession in accurate knowledge. The common cold, the "bilious attack," the mild "rheumatism"—these and a hundred other common affections await the close, constant, and scientific study of the general practitioner.

Chloroma.

THE meeting of the Edinburgh Medico-Chirurgical Society[1] held on Feb. 5th proved of unusual interest. The chief subject brought before the notice of the society was the rare condition known as chloroma. Papers were read on this subject by Dr. G. H. MELVILLE DUNLOP and Dr. BYROM BRAMWELL.

Chloroma has always been considered a very rare disease, only some 25 cases having been recorded, but Dr. BRAMWELL suggests that it is probably much more common than is usually supposed. He referred to cases in which no definite diagnosis had been made, but which from the descriptions he judged to be cases of chloroma. Dr. BRAMWELL is very probably correct. A similar course of events has not infrequently happened in connexion with other conditions. For instance, it has been clearly shown that actinomyces is more common than was at one time thought, and as soon as the true characteristics of the disease became known it naturally was more frequently recognised. Dr. BRAMWELL very lucidly pointed out the principal features of chloroma, which are: (1) the presence of lymphoid deposits in the orbits, temporal fossæ, and periosteum of the bones of the skull, and the symptoms and signs resulting therefrom; (2) the green colour of the lesions, this being the remarkable peculiarity of the disease; (3) a profound blood change, characterised by anæmia, cachexia, hæmorrhages into the skin, bleedings from the mucous membranes, especially epistaxis, and petechial extravasations into the retinæ and internal surfaces; and (4) changes in the bone-marrow, the spleen, the lymphatic glands, and the organs throughout the body similar to those found in lymphatic leukæmia, that is to say, infiltration with lymphoid deposits.

The term "chloroma" or "green cancer" sufficiently indicates one of the above characteristics. As Dr. DUNLOP stated, the cause of the green colour is unknown. No bile pigment has ever been discovered in any of the tumours. Professor DITTRICH has suggested that it is due to decomposition, but as the colour is confined to the tumour and appears during life, this view is hardly tenable. Professor HUBER made an elaborate investigation on fresh tumours to discover the source of the colour. He ascribed it to minute

[1] See THE LANCET, Feb. 15th (p. 451) and 22nd (p. 520), 1902.

molecular granulations possessing great refractive power placed between the cells, and in this opinion he is supported by Professor VIRCHOW, Professor DRESSLER, and Professor CHIARI. Dr. DOCK, whilst giving his adherence to the fatty theory, considers that it is simply an exaggeration of the greenish tint so common in the neoplasms of leukæmia. Dr. DUNLOP opposes this theory on good grounds—namely, that the colour quickly disappears on exposure to air and on immersion in fluids that have no solvent action on fats. He believes that the colour is more probably due to some chemical product, hitherto undiscovered, allied to lipochrome, which on exposure to light becomes oxidised and in the process of oxidation loses its colour. Dr. BRAMWELL stated that in the case recorded by him the change in colour which the cutaneous lesions went through during life was suggestive of a blood change, and the marked increase of the green colour which was noticed at the post-mortem examination in the skin lesions in the upper part of the body seemed to be suggestive, in part at least, of a post-mortem change (? decomposition). It is obvious, therefore, that observers are far from being unanimous in determining the nature of the green colour seen in chloroma, and there is an interesting field open for further investigations. It is possible, as Dr. BRAMWELL suggests, that the colour may be due to different causes in different cases, but we think that this theory tends only to complicate matters and we deem it more probable that a similar cause will be found to be acting in all cases. Dr. BRAMWELL introduced another point in regard to the colour. He was disposed to think that the green discolourations, though they had hitherto been considered to be essential and characteristic features of the disease, might in some undoubted cases of chloroma be absent. We are not aware that this question has been raised by other observers; if Dr. BRAMWELL is correct in his supposition the term "chloroma" will have to be altered.

The histological nature of the growths was discussed at length by both speakers. Dr. DUNLOP was of opinion that "lympho-sarcoma" was probably the best definition of their structure, resembling on the one hand lymphoma in their histological characteristics, and on the other sarcoma in the fact that they arose from the periosteum and that they spread by metastasis. Dr. BRAMWELL also brought forward arguments in favour of the lympho-sarcomatous nature of the growths. He pointed out, however, that the condition of the blood was highly suggestive of lymphatic leukæmia, and in Dr. DUNLOP'S case the changes in the blood might well have led to a diagnosis of acute lymphatic leukæmia had it not been for the appearance of the green growths. The question then arises whether chloroma is a definite and distinct disease or merely a variety of lymphatic leukæmia. Probably more than one disease are included under this term; varieties certainly have been shown to occur, and as the knowledge of pathological conditions of the blood becomes greater a more definite differentiation will be possible. All that has hitherto been demonstrated is that cases of lymphatic leukæmia present considerable differences in their clinical history and course and in the relative intensity of the lesions found after death in the bone-marrow, the spleen, and the lymphatic glands respectively. It is evident that there is a large field for investigation in these varying conditions of the blood. The knowledge of the corpuscles of the blood in health and more particularly in disease has been greatly added to during recent years. Improved methods of staining have indicated pathological changes hitherto unknown. Valuable aids to diagnosis and prognosis have been demonstrated, and as the methods of examination are elaborated more clear and definite views of the pathology of the blood will be obtained.

The Choice of a Disinfectant.

THE question as to what is the most convenient, and at the same time most effective, disinfectant for practical purposes is one, of course, of the utmost importance to the medical officer of health, to the general practitioner, and to the public. We have often wished that some definite, and preferably official, pronouncement, based upon trustworthy practical tests, could be made once for all, if only to show that the choice of an efficient disinfectant lies between only a few substances. The list of disinfectants which are urged upon the notice of the practitioner by those interested in their sale is a never-ending one and only bewilders him. Chemists in their untiring search for new compounds frequently succeed in discovering one which is a more powerful germicide than many of its antecedents, while it is a less powerfully poisonous substance, but some of the new discoveries are certainly not in the nature of improvements. We think, therefore, that in the practical experiments on disinfection recently undertaken for the London County Council by Dr. E. KLEIN, Dr. A. C. HOUSTON, and Dr. M. H. GORDON these gentlemen were wise in limiting their investigations to those disinfectants most commonly in use. The results of the trials have just been published in an official paper issued by the London County Council. The disinfectants tested were (1) carbolic acid; (2) permanganate of soda; (3) bleaching powder; and (4) corrosive sublimate, all of which were used dissolved in water in suitable proportion. In addition, and as examples of gaseous disinfectants, formaldehyde and sulphur dioxide were tried, Dr. G. NEWMAN, the medical officer of health of Finsbury, being responsible here for a share of the experimental work.

The microbes experimented with were (*a*) the spores of bacillus anthracis; (*b*) the staphylococcus pyogenes aureus; (*c*) the bacillus of typhoid fever; (*d*) the bacillus of diphtheria; (*e*) the bacillus pyocyaneus; (*f*) the vibrio of cholera; and (*g*) the bacillus of human tuberculosis. The above list represents a selection of microbes which are met with and which need to be destroyed practically every day. Moreover, the species chosen for investigation have this great advantage;—their survival or destruction could be easily ascertained, some developing colours, others cultural characters, and the rest exerting a specific action when injected. We need not enter into the details of the experiments; suffice it to state that as far as possible practical conditions were imitated. The materials infected were wood, cloth, linen, and paper. With regard to the results, Mr. SHIRLEY F. MURPHY, the medical officer of the Council, states in his summarising preface to that body, that it was found that both formaldehyde and sulphur dioxide failed in the case of wood and cloth

charged with spores. The contrast observed between wood and thick cloth on the one hand, and linen and paper on the other, probably finds explanation in the fact that the *materies morbi* soaked into the fabrics first named, whereas in the case of linen and paper the organisms were limited to the surface and were therefore more exposed to the action of the disinfectant. Apparently in one experiment the feebly resistant bacillus typhosus exposed on wood or cloth was not destroyed by formaldehyde, although it is suggested that some experimental error might have occurred. The organism, however, was destroyed under similar conditions of experiment by sulphur dioxide. We cannot quite gather whether moisture was used in conjunction with this gas which was obtained by burning ordinary sulphur. It is a question whether dry sulphur dioxide could be expected to act upon dried infectious matter, whereas in the case of wet cultures it would be almost certain to succeed in destroying the organism. In the case of tuberculous sputum dried on linen and paper formaldehyde showed to greater advantage than sulphur dioxide. Was the formaldehyde accompanied by water vapour? With regard to fluid disinfectants corrosive sublimate (1 in 1000) with 24 hours' exposure destroyed all microbes, including the spores of anthrax and the tubercle bacilli; a 5 per cent. solution of carbolic acid with the same exposure failed to destroy anthrax spores but was destructive to all others; and Condy's fluid (permanganate of soda) failed even when a solution was used containing five teaspoonfuls to the pint. Bleaching powder, "generally speaking" (to use the words of Mr. SHIRLEY MURPHY'S summary), only destroyed the less resistant form of microbes, though in the case of anthrax spores on paper and on linen this substance proved more effective than carbolic acid. In regard, however, to the experiments in which bleaching powder failed we think that this result is possibly discounted by the fact that though a solution containing a known quantity of bleaching powder was employed yet nowhere can we find that the actual strength of the bleaching powder in terms of available chlorine was ascertained. This is important, for commercial bleaching powder frequently consists of little else than inert chloride and carbonate of calcium, the active chlorine being spent.

Coming to specific instances of germicidal power it may be stated that the typhoid bacillus was killed by all the disinfectants except Condy's fluid and bleaching powder. Condy's fluid gave a negative result in each experiment, and bleaching powder used for the disinfection of wood and cloth infected with this organism failed with one hour's exposure but was efficacious on 24 hours' exposure. The bacillus diphtheriæ was killed by formaldehyde and sulphur dioxide. The vibrio of cholera was in each experiment destroyed by all the disinfectants except by Condy's fluid and bleaching powder. Condy's fluid was practically of negative value, and bleaching powder was not always efficacious on one hour's exposure but was successful with 24 hours' exposure. Bacillus pyocyaneus was acted upon in much the same way. It was killed in each experiment by all except Condy's fluid and bleaching powder. Staphylococcus aureus was also killed in each experiment by all except Condy's fluid and bleaching powder. Anthrax spores were only destroyed with certainty by perchloride of mercury, the other disinfectants either failing on each occasion or being uncertain, and almost invariably failing when wood and cloth were the materials to be disinfected. For tubercle bacilli carbolic acid and perchloride of mercury proved to be the only real germicides on each occasion. Condy's fluid and sulphur dioxide were of negative value and the other disinfectants were uncertain. These results are obviously of great importance, for they have an official standing, and they should raise the actual practice of disinfection to a much more satisfactory position.

Annotations.

"Ne quid nimis."

THE FOURTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

WE understand that rapid progress is being made with the preliminaries of the Fourteenth International Congress of Medicine, which will be held in Madrid under the patronage of the King and the Queen Regent from April 23rd to the 30th, 1903. The Spanish Minister of Foreign Affairs has invited all the Governments of other countries to send representatives, and an invitation of a like nature has been sent to all universities and schools of medicine and to the principal medical societies of all countries. The work of the Congress will be distributed over the following 16 Sections: Anatomy (descriptive, comparative, &c.), Physiology (including Biology), General Pathology (including Bacteriology), Therapeutics (including Hydrology and Pharmacy), Internal Pathology, Nervous Disorders (including Insanity and Criminal Anthropology), Diseases of Children, Dermatology (including Syphilography), General Surgery, Ophthalmology, Oto-Rhino-Laryngology, Odontology, Obstetrics (including Gynæcology), Military and Naval Medicine, Public Health, and Legal Medicine (including Toxicology). The President is Dr. Julián Calleja, and the general secretary is Dr. Angel Fernández-Caro. Medical practitioners, pharmaceutical chemists, and veterinary surgeons are eligible as members of the Congress. Applications should be sent as early as possible to the general secretary at the Faculty of Medicine, Madrid. It is requested that they may be clearly written, and they should give the names, titles, qualifications, and addresses of the writers; a cheque on Madrid for 30 pesetas (from 19*s.* to 20*s.*, according to the current rate of exchange) should accompany them. Intending members are at the same time requested to specify the section which they wish to join; they will be entitled to receive a copy of the Transactions of this section, and will at the same time be at full liberty to take part in the business of any other section. For 12 pesetas ladies accompanying members may obtain a special card of admission to official entertainments. Communications relating to the work of the Congress should reach the executive committee before Jan. 1st, 1903. The official languages will be Spanish, French, English, and German.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE Prince of Wales presided at the annual meeting of King Edward's Hospital Fund for London, held at York House, St. James's, on March 7th. The report of the General Council, which on the motion of His Royal Highness was adopted, stated that steady and continuous progress marked once again the result of the past year's work. The total receipts for the year had again shown an increase

over those of last year. The receipts are exclusive of the amounts collected by the Coronation Gift Committee. The League of Mercy had contributed £7000, being an increase of £1000 on the contribution for 1900. Excluding the Jubilee year the total receipts of the Fund were: for 1898, £39,272; 1899, £48,536; 1900, £51,549; and 1901, £53,188. With the exception of the £1000 entrusted to the Fund by the London parochial charities for distribution among convalescent homes the grants had been confined to hospitals, and it had still been deemed necessary to restrict the operations of the Fund to institutions situated within the seven-mile radius of Charing-cross. The total cost of collection and distribution for the year 1901 amounted to less than £1800, or under 3½ per cent. of the total collected. £51,000 were distributed, which sum is £1000 more than that distributed last year. It is satisfactory to know that, as His Royal Highness pointed out, the income of the Fund for the last four years has shown a steady increase. Nevertheless, the income is far short of that hoped for by the King when he first inaugurated the Fund in 1897, and the Prince of Wales hopes that the permanent income of the Fund will be increased to £40,000 or £50,000 a year.

THE INSTITUTE OF CHEMISTRY ON THE APPOINTMENT AND QUALIFICATIONS OF PUBLIC ANALYSTS.

AT the twenty-fourth annual general meeting of the Institute of Chemistry of Great Britain and Ireland held at 30, Bloomsbury-square, London, W.C., on March 3rd, Professor J. Millar Thomson, LL.D., F.R.S., the President, delivered an address dealing with the work of the Institute during the past year. From this it appears that the roll of members has increased by 36, making a total of 1040 Fellows and Associates at present on the register, while there are 130 students in course of training at the colleges and institutions recognised by the council of the Institute. An examination in biological chemistry has been established by means of which the council hopes to encourage analytical chemists to pursue the study of bacteriology and thus be able to deal with chemical work involving bacteriological knowledge. The examination is suited for such as intend to enter the practice of chemistry in its relationship to the chemistry and bacteriology of food, water, sewage, and effluents, and the practical applications of biological chemistry to such industries as brewing, tanning, &c. During the past year the council has ceased to recognise the junior, second class, and lower grade professional preliminary examinations of various examining bodies, and it has now under reconsideration the subjects which shall be compulsory for persons intending to proceed to the examinations of the institute. The council also reported to the members that during the past year it had addressed communications to the Local Government Board and to various county and borough authorities with reference to the combination of the two appointments of medical officer of health and public analyst. The Council maintains that a public analyst requires special training and experience in analytical chemistry far beyond that which is usually acquired by medical practitioners in the course of their professional education. It is true, it is argued, that medical men who take a diploma in Public Health have to undergo a four months' course in physics, chemistry, and microscopy; but while they possess a general knowledge of these subjects considerably greater than that of those medical men not possessing the diploma, yet this knowledge in no way corresponds with that required by the Institute of Chemistry for the Fellowship—viz., a course of two years in the laboratory of an analyst who is a Fellow of the Institute. The council holds the opinion that under the provisions of the Sale of Food and Drugs Act of 1875 it was intended that the medical officer of health and the public analyst for a borough or district should be two distinct persons, inasmuch as the medical officer is one of those officers empowered by the Act to submit suspected samples for analysis. The qualifications and examinations of the Institute are accepted by the Local Government Boards for public analytical appointments, and it is the desire of the council that no lower standard of chemical training and experience than that prescribed by the Institute of Chemistry should be accepted for such important and responsible public appointments as those of public analysts under the Sale of Food and Drugs Act—a desire which we share.

THE NAVAL ESTIMATES.

AN examination of the Naval Estimates shows that it is proposed substantially to increase from April 1st the pay of all naval medical officers except deputy inspectors-general (why are they neglected?). The old and new scales of pay are as under:—

—	Old.	New.
Medical Director-General	£1300 a year.	£1700 a year.
Inspector-General	£1003 ,,	£1300 ,,
Deputy Inspector-General	£767 ,,	£767 ,,
Fleet Surgeons...	27/- to 33/- a day.	30/- to 36/- a day.
Staff Surgeons...	21/- ,, 24/- ,,	24/- ,, 27/- ,,
Surgeons	11/6 ,, 15/6 ,,	14/- ,, 20/- ,,

Thus all below the rank of deputy inspector-general get a satisfactory increment of £50 a year when on full pay. "Half-pay" remains at its old figure. We hope that this change will secure for the navy a sufficient supply of competent surgeons to make up the difference between the 301 who are needed and the 283 already in the service.

A CORONER ON PROPRIETARY MEDICINES: "MRS. WINSLOW'S SOOTHING SYRUP."

MR. A. BRAXTON HICKS, coroner for Mid-Surrey, who is also the honorary secretary of the Coroners' Society, held an inquest at Kingston recently on the body of Alice Thurley, aged one year and seven months, daughter of Ernest Thurley, a licensed victualler, of Canbury-passage, Kingston. The mother said that the child had been healthy until recently when she was troubled with her teeth; she had also had two convulsions from which she had recovered. Witness had occasionally given her a little of "Mrs. Winslow's soothing syrup" and some of "Dr. Stedman's teething powders." She had not observed that there was a notice on the bottle of the former stating that it was poison. The coroner then sent his officer to borrow a bottle of the medicine from a druggist. The coroner: "You followed what is in the advertisements?" The witness: "Yes." The coroner: "I know. 'And the little cherub wakes up as bright as a button.'" Continuing, the coroner said that it was hard for him to have to drive such things into people, but he had to do it. The mixture contained morphine. The label said that it was a blessing to mothers and good for teething. The coroner (reading the circular wrapped round the bottle): "Oh, this is disgraceful. 'Mrs. Winslow, an experienced nurse and female physician, presents to the attention of mothers her soothing syrup for children teething, which greatly facilitates the process of teething and will allay pain.' I do not know how old Mrs. Winslow is now, but this has been going on for some years, and she ought to be dead and buried by this time. Oh, here we are: 'We have put up and

sold this article for over 50 years and can say in confidence and truth of it what we have never been able to say of any other medicine—never has it failed in a single instance to effect a cure.' That is a good drug, that is. 'Never did we know an instance of dissatisfaction by anyone who used it. All speak in terms of highest commendation of its magical effects and medical cures. This valuable preparation is the prescription of one of the most skilful nurses in America.' Oh, it comes from America, does it; well, I am glad to hear that." Continuing, the coroner said that he had had an analysis made of the stuff. In the old days it was the habit in Lincolnshire for mothers to give their children opium to keep them quiet. Magistrates had put a stop to that, and then some ingenious persons invented some stuff which contained morphia and called it soothing syrup. They sold it for a long time till he was able to get an analysis and then it was found to contain morphia and the company had to put a "poison" label on the bottle. It was done in small letters which could hardly be seen. It was a question whether it was not wrong to give children a narcotic at all. After reading the directions for administering the medicine the coroner said that seeing that a teaspoonful was prescribed for a baby six months old an adult would want a whole bottle. "Gentlemen," said the coroner to the jury, "we suffer from dyspepsin and other complaints, why cannot we have a cure like this?" adding that if anyone took the trouble to read the advertisements they would see that they were rubbish. He did not blame the mother of the child but the people who advised her to use the syrup. Dr. Yeo stated that death was due to heart failure brought on by acute pneumonia. Replying to the coroner he said that morphia would have the effect of depressing the heart's action, and anything containing it would be a bad thing for children with lung trouble. The coroner, in summing up, said that it was a very curious thing that the last time he held an inquest in Kingston he had before him a case in which patent medicines were concerned. This was a proprietary medicine, the contents of which could only be ascertained by analysis, as he had had done in the case of "Mrs. Winslow's soothing syrup." Long advertisements were to be found in the papers of these medicines, and he could only say that they were a fraud on the people who read them. The jury returned a verdict of "Death from natural causes," and added a rider to the effect that these medicines which contained poison should be marked in red ink. The coroner said that the jury did not wish to blame the parents. He would keep pegging away about medicines of that sort until something was done.

IS THE MUSHROOM NUTRITIOUS?

THE notion has long been held that the mushroom presented the composition of animal flesh, which led to it being called the "vegetable beef-steak." It appears, however, that this conclusion has been based on some analyses made many years ago when analytical methods were not as exact as they are now and when the chemistry of food was not so well understood. In one regard, at any rate, the mushroom does resemble a beef-steak—in that it contains practically the same amount of water. But the dry solid constituents of the mushroom differ very materially in kind from the solids of meat. The most important difference is due to the rich proportion of proteids—the so-called flesh-formers—in meat as compared with the feeble amount in the mushroom. This fact, as ascertained by recent analyses, hardly justifies the mushroom being regarded as a "vegetable beef-steak." It may be a blow to the vegetarian, but he would have to consume at least 10 pounds of mushrooms in order to gain the equivalent of a little over one pound of prime beef. Indeed, in the light of modern inquiry there seems to be no reason for believing that mushrooms possess any greater food value than other ordinary fresh vegetable foods, and in many respects they compare unfavourably with them. Still, the fresh tender mushroom is undoubtedly easily digestible, and as it contains carbohydrates in addition to some proteid it is obvious that it is of some dietetic value. This value is not comparable with that possessed by essential foods such as meat, milk, and eggs. The mushroom, however, contains an unusual proportion of potassium salts. Few will deny that the mushroom is an excellent adjunct to many dishes; it has an appetising flavour, and this quality alone makes it dietetically valuable.

MEMORIAL TO THE LATE SIR WILLIAM MAC CORMAC, BART., K.C.B., K.C.V.O.

AT a meeting of the members of St. Thomas's Hospital and Medical School held on March 11th, the Treasurer of the hospital in the chair, it was decided that steps should be taken to institute a permanent memorial of the connexion of the late Sir William Mac Cormac with the institution. A general committee of the members of the hospital and medical school has been formed and already consists of 250 St. Thomas's men. An executive committee was selected from this body, empowered to solicit subscriptions, its first object being to arrange for the production of a bust of Sir William Mac Cormac to be placed in the central hall of the hospital. It was further decided that in the event of the amount of money collected being in excess of the sum requisite for the bust a special meeting of the general committee should be called in the future to decide in what manner the surplus should be applied. The executive committee selected consists of the Treasurer of the hospital, Mr. J. G. Wainwright; two governors, Mr. Henry Bonham-Carter and Mr. T. Du Buisson; the senior physician, Dr. S. J. Sharkey; the senior surgeon, Mr. H. H. Clutton; the dean of the medical school, Dr. H. G. Turney; and four representatives of the school from London and the provinces, Mr. Thomas Wakley, jun., Mr. S. Osborn, Mr. George Wherry, and Mr. G. C. Franklin. Mr. G. H. Makins, C.B., and Mr. F. C. Abbott will act as secretaries to the committee.

VACCINATION AT HELSTON, CORNWALL.

EPIDEMICS have their uses although they are hard taskmasters. The present outbreak of small-pox in London has been the means of making obvious the inconveniences which occasionally arise from the fact of sanitary and preventive measures being in the hands of two different bodies. Thus at Helston there is friction between the town council, who are also the sanitary authority, and the guardians, who are the vaccination authorities, on the matter of vaccination. It appears that recently the council, remembering how severely the town suffered from small-pox about 30 years ago, on the advice of their medical officer of health (Mr. W. Wearne) decided to draw attention to the advantages of vaccination. Placards were displayed in the town and handbills were distributed at houses urging the vaccination of children and the revaccination of persons over 10 years of age. These notices annoyed the guardians and they seem to imagine that Mr. W. Wearne, who is also public vaccinator for a district which includes the borough of Helston, is responsible for them. At the meeting of the council held on Feb. 27th Mr. Wearne reported that he had performed over 300 vaccinations and would have done many more only that people were afraid that unless they paid the fees themselves their names would be posted in the town as paupers, the guardians having threatened to do so. The town clerk remarked that the guardians would not dare to act in such a manner, the mayor adding that the council had only performed their

obvious duty. One of the aldermen stated that it was not so much vaccination which the guardians objected to as to the account of the public vaccinator, which amounted to £50. A copy of the notices issued with a statement of what had been done had been sent by the council to the Local Government Board. The guardians have served Mr. Wearne and the other public vaccinators of their union with a notice that their services as such will not be required at the end of 28 days from the date of notification. The poster which has so offended the guardians simply stated the advantages of vaccination and revaccination and pointed out that anyone could be vaccinated free of charge by the public vaccinator either at the surgery or at his (the patient's) own house. As for the nonsense which was talked by some people that any person who appeared on the list of those publicly vaccinated would be a pauper, this is simply a device to discredit vaccination. A man is no more made a pauper by being vaccinated by the public vaccinator than he is by being notified to the medical officer of health as having scarlet fever or by taking a book out of a public library. In all these cases he, or his medical attendant, receives benefits which are paid for out of the rates. The guardians have a right to keep a list of those vaccinated by the public vaccinator, but no one has any right to make use of this list as a threat. It is right that the whereabouts of the public vaccinator should be made as public as possible in a time of epidemic, but any public vaccinator should be careful to avoid the appearance of attracting other practitioners' patients. At a meeting of the guardians held on March 1st it was resolved that the medical officers and public vaccinators should be asked to talk matters over with the board. We learn that an interview has been held between the public vaccinators and the Finance Committee of the board of guardians. The result will not be made public until the board has considered the report of the committee.

CONVERSION OF HODGKIN'S DISEASE INTO LEUKÆMIA: LEUKÆMIC LESIONS IN THE SKIN.

THE nature of leukæmia and lymphadenoma and their relation to one another still remain difficult and unsolved problems and any exceptional facts which increase our knowledge are valuable. In the *American Journal of the Medical Sciences* for December, 1901, Dr. G. W. Wende has recorded the following remarkable case. A man, aged 26 years, came under observation on April 26th, 1900. On Dec. 1st, 1899, he accidentally noticed slight induration of the skin over the left temple. It slowly increased and in two months attained the size of a florin. The centre of the cheek on the same side then became affected. A hide-bound sensation was felt whenever the jaw was moved and the pre-auricular lymphatic glands became enlarged. Then the post-auricular, the inferior maxillary, and the cervical glands were affected and in this order. On Feb. 20th, 1900, a number of superficial, irregular, yellowish-grey spots were detected over the sternum and there was a slight infiltration near the left nipple. Other spots appeared on the chest and back. The axillary glands became enlarged and tender. Examination of the blood showed no marked alterations (erythrocytes 5,128,000, leucocytes 4000, hæmoglobin 88 per cent., small lymphocytes 27 per cent., large and transitional lymphocytes 4 per cent., polymorphonuclear neutrophiles 68 per cent., and eosinophiles 1 per cent.). The initial lesion on the left temple formed an oval, dusky protuberance 10 centimetres in diameter, non-adherent to the deep parts. The centre of the left cheek bore a deep-seated infiltration from three and a half to four centimetres in diameter. In the left inframammary region were two lumps of about the size of a filbert covered by normal skin. Around the nipple was a large patch similar to that on the temple. On the lower abdomen were seven deep-seated nodules varying in size from that of a pea to that of a hickory nut. The largest was cyanotic and brown. The whole of the chest and back was mottled with numerous pigmentary stains and blotches, principally of a chocolate colour. All the superficial lymphatic glands were enlarged, the cervical most, and those on the left side of the body more than those on the right. Six minims of Fowler's solution were injected daily and the dose was increased by two drops weekly. In three weeks improvement was evident, new lesions ceased to form, and the old ones diminished. After six weeks the skin was normal except for the pigmentation. But on July 1st a growth suddenly appeared on the scalp and two on the back. On the 10th the patient had lost strength and was drowsy. The mucous membranes were becoming pale and the glands were increasing in size. Petechiæ appeared on the shoulders. Fresh hæmorrhages occurred daily on the back and chest. Retinal hæmorrhages were seen. Examination of the blood on July 10th showed the following condition: hæmoglobin, 40 per cent.; red corpuscles 1,936,000, white corpuscles 34,000, macrocytes and microcytes in moderate numbers, a few poikilocytes, and 102 normoblasts to the cubic millimetre; small lymphocytes, 95·5 per cent.; large lymphocytes, 0·7 per cent.; eosinophiles, 0·4 per cent.; and polymorphonuclear neutrophiles, 3·4 per cent. The spleen was enlarged. The gums were blue, swollen, and spongy. The tonsils became enlarged until they impinged on one another. The gums swelled until they nearly covered the teeth and became ulcerated. Death occurred on July 30th. The necropsy showed the pleuræ to be studded with lymphatic nodules. The peribronchial glands varied in size from that of a pea to that of a chestnut. The lymphatic follicles of the stomach and intestines and the mesenteric glands were enlarged. The spleen weighed 1500 grammes. Microscopical examination of the cutaneous lesions showed that they consisted of lymphoid cells in the cutis and subcutaneous tissue. The cellular elements of the lymphatic glands were greatly increased. The spleen showed similar changes. The Malpighian bodies were often twice the normal size and the pulp was crowded with lymphocytes. In the bone marrow lymphocytes were present but were not conspicuous. The liver and kidneys showed lymphatic infiltration. Cases of leukæmic infiltration of the skin have been observed since 1876 by Bisiadecki, Hochsinger, Schiff, Phillipert, and Oliver. Kreibich has reported a case in which pendulous masses, varying in size from that of a pigeon's egg to that of an adult fist, were found on the face, which in the majority of cases was the seat of invasion. As the blood was normal at the first examination Dr. Wende regards the case narrated above as an example of the conversion of Hodgkin's disease into leukæmia, an exceedingly rare occurrence.

THE ESSAYS AND ADDRESSES OF SIR JAMES PAGET.

ALL men of science will be glad to hear that a collection of selected essays and addresses by the late Sir James Paget has just appeared. The collection is edited by his son, Mr. Stephen Paget, and the publishers are Messrs. Longmans, Green, and Co. Some of the essays are apparently hitherto unpublished. The others have appeared in our own columns, in those of the *British Medical Journal*, in St. Bartholomew's Hospital Reports, in the "Clinical Lectures and Essays," in "Studies of Old Case-books," in the Transactions of the Royal Medical and Chirurgical Society, and in monthly reviews. There are also addresses, such as the Presidential Address at the International Medical Congress of 1881, the

Hunterian Oration of 1877, and the Bradshaw Lecture of 1882, which are familiar to a good many who were present at their delivery or who have seen reprints of them; but Sir James Paget is an author who will bear much re-reading. There is no doubt that the book will be a memorial not only of a great but of a lovable man, such as all who knew him either personally or by repute will be glad to possess. In an early issue we hope to give an extended review of the work.

THE PREVALENCE OF SMALL-POX.

THE returns of small-pox in London for the past week are as follows: on Saturday and Sunday, March 8th and 9th, 57 fresh cases in all were notified and removed; on Monday, the 10th, there were 67 fresh cases; on Tuesday, the 11th, there were 76 fresh cases; and on Wednesday, the 12th, there were 52 fresh cases. In Glasgow 11 new cases of small-pox were admitted to the hospital at Belvidere on March 9th and 9 on the 10th. On the same dates 26 patients were dismissed, leaving a total of 202 cases still under treatment.

THE TREATMENT OF CUTANEOUS EPITHELIOMA BY THE X RAYS.

DR. CHARLES WARRENNE ALLEN, Professor of Dermatology in the New York Post-Graduate Medical School, writing in the *New York Medical Record* of Jan. 25th, expresses the opinion that the x rays will eventually be made serviceable in the treatment of cutaneous epithelioma, but at the same time he admits that the method is as yet only in its infancy. At present he considers that the proper place of the rays is in the after-treatment or as a means of checking extension of the disease. In dealing with epithelioma he therefore prefers in the first place to follow the ordinary rules of surgical practice, and after an operation has been performed either with the knife or with caustic he strongly recommends that the rays should be applied, not however, to the extent of producing a so-called "burn." For the application of the rays, especially to the mouth, throat, uterus, and rectum, he has suggested a funnel-shaped metallic cone, into the flare of which the x-ray tube is inserted. As a source of electrical energy a static machine is preferable for use in an institution or a consulting-room, but in a patient's house an induction coil is obviously more convenient, although, perhaps, inferior from a therapeutic point of view. As to the dangers to be apprehended from the application of the x rays, he believes them to have been over-estimated although it is unquestionable that in incompetent hands much damage may be done by this method of treatment, and quacks may be the means of bringing it into some degree of disrepute. He dismisses as mistaken the idea that applications of methylene blue used concurrently with x-ray treatment interfere with the action of the latter.

THE SALARIES OF ASSISTANT MEDICAL OFFICERS OF THE METROPOLITAN ASYLUMS BOARD.

AT a meeting of the Metropolitan Asylums Board held on March 8th the Hospitals Committee sent in a report on the matter of the salaries paid to assistant medical officers. The present scale of pay was adopted some eight years ago and the committee considered that the time had arrived for revision. All assistant medical officers started at a salary of £160 per annum, increasing by annual rises of £20 per annum to £200, together with board, washing, and attendance. The committee now recommended that the salaries should be raised owing to the increase in the cost of medical education and other reasons. The senior assistant medical officer should be paid at a higher rate than the junior. Their recommendations, which were unanimously adopted, may be summarised as follows. 1. Senior assistant medical officers to be paid at the rate of £280 per annum for the first year and at the rate of £300 per annum for the second and subsequent years, with board, lodging, washing, and attendance. 2. In future all junior assistant medical officers shall be appointed on probation for not more than six months, such appointment to be subject to confirmation or revocation by the Hospitals Committee. Salary during this period to be at the rate of £180 per annum, with board, lodging, washing, and attendance. If the appointment be confirmed the salary is to be at the rate of £180 per annum, commencing from the beginning of probation and to rise by £20 per annum or at longer intervals to £240 per annum, with board, lodging, washing, and attendance. 3. Assistant medical officers already in the service of the Board are to be classified according to length of service and from March 25th, 1902, they shall be paid under the new scale.

THE DANGERS OF ACETYLENE.

AN important report dealing with the apparatus and material used in the generation of acetylene has recently been printed in a Parliamentary paper. The members of the committee, seven in number, were all experts—some in regard to explosives, others to petroleum, and others to coal gas. Of the generators examined not one appeared to be unsatisfactory under the conditions of the test, but, as is pointed out, this does not necessarily mean that all the types of generators on the market were safe, for some appliances were withheld because it was felt that they would not pass the test, and in some instances serious defects in the design were made good before the generator was submitted to the test. The committee states that attention should be given to the following five points in regard to the construction of the generator: (1) it should be simple in action and design; (2) it should be strongly constructed; (3) it should give a high efficiency as indicated by the yield of gas per unit of carbide; (4) the pressure of gas in the generator should always be low; and (5) the residue of lime in the generator should be easily removeable. There is obviously no reference here to the purity of the carbide. This, it seems to us, is an important point, for the ordinary impurities of carbide are compounds which when moistened with water yield two poisonous gases—namely, phosphoretted hydrogen and sulphuretted hydrogen. Moreover, it is possible that the presence of impurities in carbide might render the gases generated from it spontaneously inflammable.

THE SYMPTOMATOLOGY OF SYPHILITIC SPASMODIC PARAPLEGIA.

AT the meeting of the Société Médicale des Hôpitaux of Paris on Feb. 14th Dr. Pierre Marie pointed out that the symptoms of syphilitic spasmodic paraplegia are characteristic—a fact which, despite the numerous works on the affection, particularly that of Erb, has not been sufficiently brought into prominence (*mis en relief*). Though the gait is spastic, it is not only spasm which prevents the patients from walking, but also paralysis of the flexors of the lower limbs. This paralysis is remarkably localised; the power of the psoas and iliacus muscles is always diminished in a more or less marked fashion: flexion of the thigh on the pelvis is performed with great difficulty, or at least with considerably less force than in a normal individual. Similarly, there is feebleness of flexion of the knee and of dorsal flexion of the foot, but this is generally much less than that of the psoas muscle. There is a curious difficulty of adduction of the thighs: if the patients are told to press the knees together the latter can, almost without effort, usually be separated by the hand to a distance of seven or eight centimetres, but no farther in consequence of the

muscular resistance of the patient. Thus adduction is enfeebled only when the knees are close together. Adopting the suggestion of his pupil, M. Goulden, Dr. Marie thinks that this phenomenon is due to paralysis of the pectineus muscle. The sphincter troubles are also peculiar. There is not incontinence in the ordinary sense, but an imperious desire to micturate and to defecate which must be satisfied at once. Sensory affections are rare. Genital troubles, on the contrary, are common; both sexual desire and power are affected and the cremasteric reflex is often abolished. All the patients' symptoms are not necessarily paraplegic. There may be paresthesia or weakness of the muscles of the upper limbs, more often of one upper limb. Frequently there is increased susceptibility to emotion—a spasmodic tendency to laugh or to cry; more rarely there is slight loss of memory. Dr. Marie insists that the symptoms on which stress has been laid are so constant that they constitute a well-marked type. The morbid anatomy of the affection he is unable to define. This lucid description well illustrates Dr. Marie's clinical acumen—his power of discovering types where others only observe cases. But while freely admitting the great value of his latest contribution to clinical medicine we venture to think that his description applies to a particular type of syphilitic spasmodic paraplegia rather than to the affection in general.

ANNAMESE MEDICINE.

"BETTER fifty years of Europe than a cycle of Cathay," sang Lord Tennyson, and in so far as regards Annamese medical practice the late Laureate's dictum would seem to be fully justified. According to a writer in the *Archives de Médecine Navale* for January no native of Annam is allowed to practise medicine or surgery unless he has studied under a recognised master for at least 10 years, but notwithstanding this prolonged curriculum the results, measured by Western standards, are simply deplorable. It is not that the Mongoloid medical students are accused of abnormal idleness or of excessive stupidity, for, on the contrary, they are said to be very industrious and, according to their lights, by no means devoid of intelligence. From their earliest days, however, they become imbued with the grossest superstition, complicated by a firm belief in astrology, and naturally it is next to impossible for genuine knowledge to attain to any useful dimensions in the midst of such exuberant weeds. The Annamese Pharmacopœia is made up of an immense number of exceedingly complex formulæ, and before the simplest of the medicaments can be prepared the compounder has to perform the most perplexing ceremonies in order to insure its efficacy. Amongst metals gold, silver, and iron are in high repute as remedies, but the writer does not make the mode of their administration clear. Iron, he tells us, is used for wounds caused by cutting instruments. In the same connexion it may also be noted that zinc is employed for combating colic as well as for assisting parturition. In the latter case, however, the attendant nails the metal to the threshold of the patient's room. Earth is freely administered in many diseases. When freshly stirred up by rats it is believed to cure paralysis, cramps, and beri-beri, and it is likewise thought capable of preventing the crying of infants in utero. As a comestible earth is freely consumed by well-to-do people throughout the country, but its votaries acknowledge that it has no taste or nourishing properties whatever. Habit, they say, is responsible for the practice, but pregnant women have been known to declare that the "little cats'-ear tiles," as the earth tablets are called, have as good a flavour as pig's liver. The Annamese do not hesitate to consume the flesh of cattle that have died from infectious diseases, and also freely eat fowls that have died from cholera or diphtheria. One of their most cherished drugs consists of small-pox crusts which are given internally as a prophylactic when the disease is exceptionally prevalent. Hydrophobia in Annamese estimation can be communicated to a human being if a mad dog should bite his shadow, but happily the liver of the animal is a sovereign cure! The "stercoraceous" remedies used by the Annamese are more repulsive, if possible, than those of the Honourable Robert Boyle, to which we recently alluded[1]; but, on the other hand, it is pleasant to find that strawberries fortify the five organs of the circulation, cure consumption, and restore youth to old people.

PROPOSED MEMORIAL TO THE LATE SURGEON-GENERAL W. NASH, A.M.S.

FOR the purpose of placing a memorial brass in the church of the Royal Victoria Hospital at Netley to the memory of the late Surgeon-General W. Nash, A.M.S., a committee has been formed consisting of Deputy Surgeon-General J. Meane, A.M.D. (ret.), Colonel W. F. Stevenson, C.B., R.A.M.C., and Colonel W. L. Gubbins, R.A.M.C. It is also proposed to place a portrait of the deceased officer in the headquarters mess of the Royal Army Medical Corps. Subscriptions, which are invited from members of the Army Medical Service and the Royal Army Medical Corps both on the active and retired lists, should be remitted by cheque to 28, Charles-street, St. James's-square, S.W., payable to Major B. M. Skinner, R.A.M.C., and crossed "Sir C. R. McGrigor and Co., Memorial to Surgeon-General Nash." The following subscriptions have already been received: Surgeon-General W. Taylor (Director-General of the Army Medical Service), £2 2*s.*; Surgeon-General A. H. Keogh (Deputy Director-General of the Army Medical Service), £1 10*s.*; and Deputy Surgeon-General J. Meane, £2 2*s.*

THE CASE OF THE MILE END INFIRMARY.

CERTAIN letters have recently appeared in the *Times* in which Dr. J. Harley Brooks, medical superintendent of the Mile End Infirmary, has explained the circumstances in which seven nurses at that institution declined revaccination and became infected with small-pox introduced into the hospital by a patient in whom its presence was not recognised. In reply to these Mr. Bernard Shaw, the well-known author, who appears to take a praiseworthy interest in the sanitation and health of the metropolitan borough in which he lives and of the community in general, has written criticising the statements and deductions of Dr. Harley Brooks. In a letter which appeared on March 1st Mr. Shaw, who is nothing if not original, propounded the suggestion that "the presence in the Mile End Infirmary of a number of nurses suffering from variolous eruptions on the arm produced not only the outbreak of small-pox among the unrevaccinated nurses but also among the patients." To this Dr. Harley Brooks has replied by pointing out among other things that the revaccination of the nurses who escaped small-pox took place at the end of October and at the beginning of November in last year, while the outbreak of small-pox (apart from its being directly traceable to a patient who died from it) occurred in the following January. Mr. Bernard Shaw does not seem to have very carefully ascertained his facts before propounding deductions to be founded on them. Nor does he explain how if his theory were to be upheld, small-pox would ever be absent from the community. Vaccinated infants suffering from what Mr. Bernard Shaw calls variolous eruptions are not infrequently found in crowded rooms where other persons, vaccinated and unvaccinated, would be far more exposed to the infection of vaccination if it existed than the nurses were at the Mile

[1] THE LANCET, Feb. 22nd, 1902, p. 566.

End Infirmary, while maternity hospitals would become centres for the dissemination of the disease. In short, Mr. Bernard Shaw can hardly be congratulated upon initiating a discovery likely to bear serious results, while the case of the nurses at Mile End is an excellent example of the protective power of revaccination.

DINNER OF THE MEDICAL SOCIETY OF LONDON.

THE 129th anniversary dinner of the Medical Society of London was held on March 8th at the Whitehall Rooms, Dr. W. H. Allchin, the President, being in the chair. The guests of the society were Sir William S. Church, Bart. (President of the Royal College of Physicians of London), Mr. H. G. Howse (President of the Royal College of Surgeons of England), Dr. T. Clifford Allbutt (Regius Professor of Physic at the University of Cambridge), Surgeon-General W. Taylor (Director-General of the Army Medical Service), Mr. Alfred Willett (President of the Royal Medical and Chirurgical Society), Mr. Howard Marsh (President of the Clinical Society of London), Mr. Herbert W. Page (President of the Neurological Society), Dr. P. Horrocks (President of the Obstetrical Society of London), Dr. Urban Pritchard (President of the Otological Society of the United Kingdom), Dr. T. E. Burton Brown (Master of the Society of Apothecaries of London), and Dr. Patrick Manson, C.M.G. After the toasts of "The King" and of "The Medical Society of London" the President presented the Fothergillian gold medal to Dr. Manson in recognition of his work on tropical diseases. Dr. Manson replied. Mr. A. Pearce Gould then proposed "Our Fellow Societies," to which Mr. Willett replied. Mr. Edmund Owen proposed the health of "Our Visitors," which was responded to by Sir William Church. Dr. Frederick T. Roberts proposed "The Health of the President," who replied. This terminated a most successful dinner, at which over 100 Fellows of the society and their guests were present.

"INTERNAL DERANGEMENT" OF THE KNEE-JOINT.

THE cases designated by the above title are of particular importance because they most commonly occur in active youthful or middle-aged subjects, and thus the condition disables a person in other respects especially able so far as his physical powers are concerned. With modern surgery a great advance has been made in the treatment of these cases, the classical description of which was given in a paper by Hey. This surgeon, however, appears to have considered the symptoms which he so well described to be always due to dislocation of a semilunar cartilage. That this is by no means always the case we are now certain and the variety of lesion which may cause frequent attacks of inability to extend the knee and of pain and weakness in the joint is well shown in the paper which we publish by Mr. Herbert Allingham at p. 731 of our present issue. Mr. Allingham certainly includes some conditions which have not hitherto often been recognised as giving rise to the same symptoms as those occasioned by injury to the semilunar cartilages, but he also shows the different conditions in the cartilages themselves which cause Hey's symptoms of "dislocation." His series of cases is very instructive from this point of view and the loose bodies and various splittings and separations from attachments which his cases illustrate were paralleled by the examples recently given in our columns by Mr. A. E. Barker[1] and Mr. J. M. Cotterill.[2] It is interesting to note that Mr. Barker does not seem to consider splitting of a semilunar cartilage across at any point between its two ends at all probable on scientific grounds and he had not met with such a condition. His paper, however, did not put forward a large number of cases, and Mr. Allingham's wider series includes examples apparently of this lesion which Mr. Cotterill also states that he has found. An instructive feature is the ease with which displacement of a semilunar cartilage appears to occur in certain subjects, particularly those who for any reason have suffered from chronic synovitis of a knee-joint. As regards treatment Mr. Allingham lays especial stress on the value of massage and exercises, and there is no doubt that the condition of the ligaments and muscles accessory to the joint plays an important part in the prevention of the attacks caused by internal derangement. Cases in which there are frequent recurrences, however, and those where there is a perfectly free piece of cartilage, are not satisfactorily treated without operation.

[1] THE LANCET, Jan 4th, 1902, p. 7.
[2] THE LANCET, Feb. 22nd, 1902, p. 510.

HUNTER AND URINARY SURGERY.

IN his recent Hunterian Lecture before the Hunterian Society Mr. Reginald Harrison claimed that in many points the teaching of John Hunter might be said to represent even the most advanced teaching of the present day. Urinary fistulæ in the perineum are often exceedingly troublesome, for they may refuse to heal in spite of much energetic treatment. Hunter showed by the analogy of a lithotomy wound that the non-healing was not due merely to the fact that urine was passing over the wound. There must therefore be some other cause for the lack of healing. The essential provision for the closing of these urinary fistulæ is a perfectly free channel for the escape of the urine, and, as Mr. Harrison pointed out, it may be even at the present time the best treatment to perform a perineal section to allow the urine to escape freely, and he quoted a case in which five urinary fistulæ were in this manner induced to close, although for 18 months previously many other forms of treatment had been employed in vain. Again, with regard to vesical hæmorrhage, Hunter advised perineal section for cases in which profuse hæmorrhage occurred into the bladder with the formation of large clots. In this way the bladder is thoroughly rested and the clots are easily removed. Mr. Harrison cited many other instances of the value of Hunter's practice and suggestions in this department of surgery; many of them are of great interest, but all who have studied Hunter's work will know that it was founded on a firm basis of pathology; and though as our knowledge surpasses that which he possessed we can accomplish more than was possible to him, yet much that he taught will be of value as long as surgery shall endure.

THE NATIONAL ANTARCTIC EXPEDITION RELIEF FUND.

IT is not at all creditable to the people of a country which has produced so many daring sailors and whose history is so closely associated with maritime adventure that any very great efforts should be required to find the money necessary to equip a relief ship in order to render assistance to Captain Scott who left London on July 31st last on a voyage of antarctic research. Captain Scott of the *Discovery* in a letter to Sir Clements R. Markham, President of the Royal Geographical Society, dated Lyttelton, Dec. 17th, 1901, expresses his confidence that a relief ship will be sent to him, but only a little more than £8000, including a magnificent subscription of £5000 from Mr. L. W. Longstaff, have been as yet subscribed towards this object, or less than half the £20,000 required for the purpose of equipping the relief vessel. His Majesty the King is patron of the expedition, and H.R.H. the Prince of Wales, the vice-patron, has expressed himself very strongly as to the urgent necessity for the

despatch of the relief ship, besides subscribing to the fund. It would be a deplorable thing if from want of funds proper precautions for the safety of the explorers were not taken and a second Franklin disaster should occur. To medical men the undertaking will specially appeal, for more than one member of our profession has taken part—notably John Rae, to mention one name only—in Polar research; but the expedition is really a national one, as its funds were raised by public subscription, supplemented by a Government grant. Moreover, valuable work has already been performed by Captain Scott and his party, and there is every reason to hope that the expedition will be successful if it is properly supported. We sincerely trust that for our own national honour, as well as for the sake of the brave men who volunteered for service in the expedition, the money required will at once be forthcoming.

THE committee appointed by the Lord President of the Council to inquire into the Pharmacy Act, 1868, has been sitting at Whitehall this week under the chairmanship of Sir Herbert Maxwell. The special object of the committee is to decide upon the modifications necessary in the list of poisons referred to in Schedule A of the Act.

Dr. Louis Cobbett and Dr. E. S. St. Barbe Sladen have been appointed by the Royal Commission on Tuberculosis to assist in the experimental work of the Commission to be carried out at Stansted. They will reside at the farms and will devote the whole of their time to the investigations of the Commission.

THE Midwives Bill, as will be seen by our report of the proceedings on page 784, is now being fought out in Committee. An important amendment, moved by Sir John Tuke, to the effect that only certified midwives should be able to sue for fees was carried by 21 votes to 10.

MR. WALTER OTTO GOLDSCHMIDT has presented a cast of the bust of his late mother to the Jenny Lind Infirmary at Norwich. The bust was executed by the late Mr. Joseph Durham, A.R.A., in 1848. It was the only one for which the famous singer ever sat.

THE death is announced at Redhill, on March 7th, of the Rev. William de Lancy West, D.D. He was educated at St. John's College, Oxford, and from 1870 to 1885 was headmaster of Epsom College.

HIS MAJESTY THE KING has promised his patronage and that of the Queen to the grand bazaar which is to be held at the French Embassy on June 10th and 11th next for the benefit of the French charities in London.

THE ROYAL INSTITUTION.—In a lecture on Some Developments of Electricity delivered on March 8th Lord Rayleigh showed the well-known phenomenon of the luminosity of a fluorescent screen exposed to the Roentgen rays. He then discussed at some length the remarkable effect of these rays in promoting the condensation of aqueous vapour. It has long been known, he said, that if damp air be suddenly expanded—as, for instance, by sucking air from a flask with the mouth—fog is formed in the air thus expanded. The explanation is that the air becomes cooled by the expansion and water vapour becomes condensed. Aitken discovered some years ago that the presence of nuclei of some kind, such as suspended atmospheric motes or dust, was essential to the formation of fog. In course of time the fog disappears by subsidence of the motes which are thus got rid of and the expansion may be repeated without the production of fog. Exposure to the Roentgen radiation greatly heightens the effect. The probable explanation is that this radiation causes the formation of nuclei in large numbers, these nuclei not being motes but molecules of the nature of the ions which are assumed to be formed in the transmission of electricity through solutions capable of electrolysis.

Looking Back.

FROM

THE LANCET, *SUNDAY, MARCH* 14, 1824.

To the Editor of The Lancet.

SIR,—As I feel not the slightest hesitation to believe that the publication of THE LANCET was intended for the advancement of the Surgical art, as well as for the improvement of medical science in general, so also am I of opinion that the result will realize every expectation which has been entertained of its utility. The very accurate detail of the lectures alone, cannot fail to impress the juvenile reader with an increased degree of understanding of the subjects of which they treat, and will enable him to exercise his talents with the best effects to his future reputation, as well as to society at large.—It has ever been a subject of remark and regret, that Lectures are generally given with a rapidity too great to permit the audience to give them the perfect attention they require to receive from them the information they were intended to convey. These objections are now removed, and the consequences will be important as well as permanent. In reading with attention the Hunterian Oration, which was published in THE LANCET a little time since, I had an opportunity of attentively considering the contents, and through the medium of your paper of this week, I beg leave to say, that although the gratification I enjoyed in hearing the oration delivered by Mr. CLINE, (whom I have ever held in high estimation) exceeded beyond any comparison the pleasure I felt in hearing that delivered by Sir EVERARD HOME in 1822, yet as some observations and statements which fell from the learned orator, were I think rather objectionable, and such as I have no hesitation to believe, would have been so considered by the excellent and meritorious subject of the oration, whom I had the felicity personally to know, I trust I shall be pardoned in taking the liberty to declare them. I profess myself to entertain an opinion somewhat different from many others upon the existence and nature of what is termed genius, and am inclined to impute much more of the discoveries which he made, and the knowledge which he acquired to the enthusiastic ardour (the language of the elegant orator) with which he prosecuted his investigations, than to any independent act of genius alone. Indeed, if we advert to the statement of the worthy President, we shall find that for the first twenty years of Mr. Hunter's life, no particular disposition was discovered denoting a preference for medical subjects, and that it was not till after twenty-seven years of additional application and study that he felt himself qualified to begin his course of lectures, a period which I shall be justified in declaring, is quite sufficient, connected with assiduity like his, to attain a knowledge of any subject, in a very superior degree. If genius were indispensably necessary to the attaining of an art evidently intended for the possession of many, deplorable would be the state of those, who are now sufficiently suffering from the combined influence of inattention and ignorance, and it would also reflect, in a measure, on Providence itself for withholding, from us, generally speaking, those abilities and powers without the possession of which, the practice of the art of surgery cannot be successfully carried on. I by no means intend to deny that genius has often existed, but it was under circumstances very different from the present; for as it is clear that the productions of the earth, matured as they were intended to be, by the industry and labour of man, are given him to relieve his wants and support his personal existence, so the arts and sciences were equally designed to be the food and support of his mental faculties; and as it has but too frequently occurred that the indolence of his disposition, and ingratitude of his nature have prevented him from cultivating them, to the extent they are entitled to, in order to prevent them from falling into a state of total oblivion, (which in justice to futurity cannot be permitted to take place), Providence has been repeatedly called upon to raise up characters possessing more than common propensities to cultivate and perfect any particular art or science, and this is what might properly be deemed genius, conspicuous in its commencement, vigorous in its growth, and expanding to an

extent which throws at a distance all impediments arising from the imperfections of our nature. Another objection, which I feel to enthusiasm, such as was possessed by the individual so justly and universally admired, being imputed to genius alone is, that independently of the derivation from his energy and zeal, he is held up to posterity more as a subject of admiration for his genius, (if such it must be deemed) than imitable for his talents, industry, and knowledge, and thus rendered at one moment elevated, but useless, a point of view, in which to have been considered by after ages, that would have rendered him truly miserable. Inquiries into the arcana, the principles, and perfections of nature; aided by investigation so accurate as was his, will ever from nature receive information and instruction, and among many other advantages, which would certainly accrue, a release from the prevailing influence of the liver humbuggery would be one inevitable and invaluable result, the liver being an organ more connected with, than productive of, the diseases of the digestive organ, more sinned against than sinning, the means employed for the removal of which, have been productive of distress, disease, and destruction to thousands. It is a well known fact, that many of the islands in the intertropical seas are formed by the association and combination of animalculæ of the Polypi description; thus interminably forming a perfect separation between land and water. Surely therefore, the combination of human talent if energetically exerted, can separate knowledge from ignorance, and science from quackery.

I am, Sir,
Your obedient servant,

GEORGE WILKINS,
Surgeon.

38, York-place, City-road,
March 10, 1824.

THE METROPOLITAN WATER-SUPPLY.

III.[1]

THE GRAND JUNCTION WATERWORKS COMPANY: SOME QUESTIONS FOR THE PRESIDENT OF THE LOCAL GOVERNMENT BOARD.

THE arrangements of the Grand Junction Waterworks Company are in one respect more unsatisfactory than are those of any of the other metropolitan water companies.

1. There is a great deficiency in reservoir capacity.
2. The water supplied by the company gives evidence of the defective method in which it is treated.

1. The marked deficiency in the capacity of the storage reservoirs of the Grand Junction Company is very clearly seen by comparing it with that of the West Middlesex Company, and for this purpose a table has been compiled from the monthly report of the Water Examiner for December, 1901. The West Middlesex company is taken for purposes of comparison for reasons which were given in the second of these articles,[2] which were, briefly stated, that the arrangements of the company were put into a moderately efficient state by the directors as soon as the shareholders of the company had received their back dividends and their future full statutory dividends appeared to be secure. Table I. shows the daily average amount of water supplied by the West Middlesex and the Grand Junction companies for the month of December, 1901 (the latest available statistics). It gives also the estimated population supplied, the area and capacity of the storage and subsidence reservoirs of the two companies, and the area of their filter-beds.

This table speaks for itself. Whoever has eyes to see can see if he chooses to look. The West Middlesex Company, which was distributing something less than 21,000,000 gallons of water, has a storage area of 117 acres, and the Grand Junction Company, with a storage area of only 15 acres, was distributing nearly 19,000,000 gallons daily. The storage capacity of the Grand Junction Company would have to be increased more than sixfold to equal that of the West Middlesex Company. No amount of expert evidence can alter this fact. No truthful man could deny that the reservoir capacity of the Grand Junction Company is extremely inadequate, and as a tree is known by its fruit so the imperfections in the arrangements of a water company are shown by the quality of the water which it supplies.

2. In the last published annual report of the Local Government Board[3] Dr. T. E. Thorpe, F.R.S., the analyst appointed by the Board, called the attention of the President to the great importance which should be attached to the adequacy of the capacity of subsidence reservoirs and to the effects which were produced by a deficiency in this respect. He pointed out that by drawing on their stored water at periods during which the Thames is in a dirty state some companies distribute their supplies in a less impure condition than they would have been able to do had they possessed no arrangements for storage. An instructive table was given to elucidate this point and to show the relative positions of the Thames companies with regard to storage and to the organic elements in the water which they delivered during the six winter months of 1900. The table is as follows:—

TABLE I.—*Showing the Daily Average Amount of Water Supplied and the Estimated Population Served during the Month of December, 1901, and the Area and Capacity of the Storage and Subsidence Reservoirs and the Filtration Areas of the West Middlesex Waterworks Company and the Grand Junction Waterworks Company. (Compiled from the report of the Water Examiner.)*

Companies.	Average daily supply during the month.	Estimated population.	Storage and subsidence reservoirs.		Filtration area in acres.
			Area in acres.	Capacity in gallons.	
West Middlesex Waterworks Company ...	20,565,429	650,734	117½	397,500,000	22½
Grand Junction Waterworks Company ...	18,917,127	449,764	15	58,500,000	24½

TABLE II.—*Showing the Relative Positions of the Thames Companies with regard to Storage and to the Organic Elements in the Water which they delivered during the Six Winter Months of 1900.*

Companies.	Number of days' supply in unfiltered water reservoirs.	Organic elements (carbon and nitrogen): average for months of January, February, March, October, November, and December, in parts per 100,000.
Chelsea...	15·0	0·208
West Middlesex...	18·5	0·219
Southwark	13·2	0·303
Grand Junction...	2·9	0·342
Lambeth	5·0	0·227

In his comments on this table, Dr. Thorpe says: "From this it is seen that the Chelsea, West Middlesex, and Southwark companies, having from 13·2 to 18·5 days' storage, delivered the best water. ..... The Grand Junction with less than three days' storage delivered water containing the most organic matter, whilst the Lambeth Company with but little more storage succeeded in supplying slightly better [we should prefer to say *less impure*] water than the former company."

We have had occasion to call attention to the fact that the analyst of the Local Government Board has not been allowed or instructed to make a sufficient number of observations on the quality of the water supplied by the metropolitan water companies. For a long time only one full analysis was made monthly of one specimen only of the water supplied by each company. There has been no evidence to show that the specimen has not been taken in a perfectly haphazard manner in regard to the time at which it was taken. We have insisted that it was necessary that analyses should be made at times during which the

[1] Articles I. and II. appeared in THE LANCET of March 1st (p. 614) and 8th (p. 692), 1902, respectively.
[2] THE LANCET, March 8th, p. 692.
[3] Thirtieth Annual Report of the Local Government Board, 1900–1901, London, 1901.

Thames was in flood. At length we are glad to see that this for once has been done. During the month of December two analyses were made of the water supplied by the Grand Junction Company. The results are given in the following table:—

TABLE III.—*Giving the Results of the Analyses, expressed in parts per 100,000, of Two Specimens of the Water supplied by the Grand Junction Waterworks Company in December, 1901. (From the report of analyses of the metropolitan water-supply undertaken by Dr. T. E. Thorpe, F.R.S., on behalf of the Local Government Board.)*

Date.	Place of collection.	Organic carbon.	Organic nitrogen.	Ammonia.	Chlorine.
Dec. 9th, 1901.	Cab rank, Piccadilly, opposite Bolton-street	0·129	0·014	0·0	1·9
„ 31st,* „	Cab rank, Shepherd's Bush Green	0·287	0·032	0·014	2·2

* The Thames water was in a "bad" state from and including Dec. 26th to the end of the month.

In his remarks on the results of the analyses Dr. Thorpe says: "The Grand Junction Company's supply on Dec. 31st, ... contained a considerable proportion of organic impurity, chiefly of vegetable origin. ....." Dr. Thorpe also makes some remarks on the presence of ammonia, which he found in comparatively large quantity in the water supplied on Dec. 30th and 31st: "The supply of these companies" (the Southwark, Grand Junction, and Lambeth), he says, "on several occasions in the latter part of the month contained sensible amounts of free ammonia, the largest proportion (0·023 part per 1000) being found in the Grand Junction Company's water on Dec. 30th. As free ammonia in more than minute traces is only exceptionally found in the filtered waters, it appears that this constituent must have been present in more than usual proportion in the raw Thames water during the recent floods." This hypothesis is, perhaps, not of much importance. The fact on which we would insist is that ammonia should not be distributed in the drinking-water supplied to the people of London. Enough has been said to prove that the water supplied by the Grand Junction company gives conclusive evidence to show that the method in which it is treated is defective.

Is the President of the Local Government Board aware that the capacity of the storage and subsidence reservoirs of the Grand Junction Waterworks Company is insufficient in amount?

Is the President of the Local Government Board aware that the quality of the water supplied by the Grand Junction Waterworks Company gives conclusive evidence that the manner in which it is treated is defective?

If the President of the Local Government Board is not aware of these facts, will he make himself acquainted with the reports of the Water Examiner and of the analyst who are appointed by the Local Government Board?

If the President of the Local Government Board is aware of the facts, has he made any communication to the directors of the Grand Junction Waterworks Company with reference to them? If he has not done so, why has he not done so? If he has done so, when did he do so and with what result?

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 9143 births and 5835 deaths were registered during the week ending March 8th. The annual rate of mortality in these towns, which had been 24·4 and 23·3 per 1000 in the two preceding weeks, further declined last week to 20·5 per 1000. In London the death-rate was 24·6 per 1000, while it averaged 18·8 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 10·1 in Smethwick, 11·0 in Hornsey, 11·4 in Wolverhampton, 12·4 in Walthamstow, 12·8 in Middlesbrough, 13·1 in Great Yarmouth, and 13·7 in Plymouth and in Swansea; the highest rates were 25·2 in Preston and in Huddersfield, 25·5 in Warrington, 26·0 in Bury, 27·0 in Burnley, 27·4 in Blackburn, 27·6 in Stockport, and 30·4 in Barrow-in-Furness. The 5835 deaths in these towns last week included 600 which were referred to the principal zymotic diseases, against 582 and 570 in the two preceding weeks; of these 600 deaths 167 resulted from measles, 120 from whooping-cough, 92 from small-pox, 89 from diphtheria, 52 from scarlet fever, 42 from "fever," and 38 from diarrhœa. No death from any of these diseases occurred last week in Hastings, Bournemouth, Great Yarmouth, Hanley, Burton-on-Trent, Kings Norton, Smethwick, or Tynemouth; in the other towns they caused the highest death-rates in Willesden, Tottenham, Northampton, Leicester, Bootle, Wigan, Burnley, and Blackburn. The greatest proportional mortality from measles occurred in Tottenham, Willesden, Southampton, Northampton, Leicester, Stockport, Burnley, and Huddersfield; from scarlet fever in Wigan and in Handsworth; from diphtheria in Portsmouth, Bristol, and Derby; from whooping-cough in Devonport, Walsall, and Leicester, from "fever" in St. Helens and in Bolton; and from diarrhœa in Bootle. 92 fatal cases of small-pox among persons belonging to these 76 towns were registered last week; of these, 80 belonged to London, six to West Ham, and one each to Croydon, Tottenham, East Ham, Reading, Leicester, and Swansea. The number of small-pox patients under treatment in the Metropolitan Asylums hospitals, which had been 1185, 1321, and 1309 on the three preceding Saturdays, had risen to 1512 on Saturday, March 8th; 555 new cases were admitted during the week, against 390, 502, and 379 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital at the end of the week was 2283, against numbers decreasing from 3137 to 2307 on the 10 preceding Saturdays; 277 new cases were admitted during the week, against 260, 219, and 215 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 885 and 733 in the two preceding weeks, further declined last week to 590, but were 53 above the corrected average. The deaths directly attributed to influenza numbered 89, having been 51, 107, and 103 in the three preceding weeks. The causes of 76, or 1·5 per cent., of the deaths in the 76 large towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Salford, Leeds, Newcastle, and in 41 other smaller towns; the largest proportions of uncertified deaths were registered in Reading, St. Helens, Warrington, Preston, Sheffield, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 25·3 and 22·6 per 1000 in the two preceding weeks, rose again to 25·4 per 1000 during the week ending March 8th and exceeded by 4·9 the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 15·6 in Perth and 19·2 in Paisley to 26·9 in Edinburgh and 29·8 in Dundee. The 820 deaths in these towns included 20 which were referred to whooping-cough, 17 to diarrhœa, 14 to measles, seven to scarlet fever, seven to diphtheria, two to small-pox, and two to "fever." In all 69 deaths resulted from these principal zymotic diseases last week, against 81 and 75 in the two preceding weeks. These 69 deaths were equal to an annual rate of 2·1 per 1000, which corresponded with the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 20, 20, and 23 in the three preceding weeks, declined again last week to 20, of which eight occurred in Glasgow, five in Aberdeen, three in Edinburgh, and two in Dundee. The deaths from diarrhœa, which had been 22 and 13 in the two preceding weeks, rose again to 17 last week, and included nine in Glasgow and five in Edinburgh. The fatal cases of measles, which had been 12, 17, and 19 in the three preceding weeks, declined again last week to 14, of which nine were registered in Glasgow and three in Dundee. The deaths from scarlet fever, which had been three and four in the two preceding weeks, further rose to seven last week and included four in Glasgow. The fatal cases of diphtheria, which had been three, six, and one in the three preceding weeks, rose again last week to seven, of which two occurred in Dundee and two in Greenock. The deaths from small-pox, which had been two, seven, and

10 in the three preceding weeks, declined again last week to two, both of which were registered in Glasgow, where the two fatal cases of "fever" also occurred. The deaths referred to diseases of the respiratory organs in these towns, which had been 211, 224, and 214 in the three preceding weeks, rose again last week to 230, and were 69 in excess of the number in the corresponding period of last year. The causes of 48, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 33·3 and 28·6 per 1000 in the two preceding weeks, rose again to 29·7 per 1000 during the week ending March 8th. During the past four weeks the death-rate has averaged 29·3 per 1000, the rates during the same period being 27·0 in London and 23·1 in Edinburgh. The 216 deaths of persons belonging to Dublin registered during the week under notice showed an excess of eight over the number in the preceding week, and included 13 which were referred to the principal zymotic diseases, against 11, 11, and 13 in the three preceding weeks; of these, six resulted from measles, three from diphtheria, two from "fever," one from scarlet fever, and one from diarrhœa. These 13 deaths were equal to an annual rate of 1·8 per 1000, the zymotic death-rates during the same period being 2·7 in London and 1·6 in Edinburgh. The fatal cases of measles, which had been three, three, and one in the three preceding weeks, rose again last week to six. The deaths referred to "fever," which had been three in each of the two preceding weeks, declined last week to two. The three fatal cases of scarlet fever exceeded the number recorded in any recent week. The 216 deaths in Dublin last week included 32 of children under one year of age and 75 of persons aged upwards of 60 years; the deaths of infants showed a slight decline from the number in the preceding week, while those of elderly persons were considerably in excess. Five inquest cases and three deaths from violence were registered; and 81, or three-eighths, of the deaths occurred in public institutions. The causes of eight, or nearly 4 per cent., of the deaths in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING FEBRUARY, 1902.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in each of the cities and boroughs in the county of London. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 11·4 per 1000 of the population, estimated at 4,579,107 persons in the middle of the year. In the three preceding months the rates had been 11·6, 10·6, and 11·4 per 1000 respectively. The rates were considerably below the average in Kensington, Fulham, Chelsea, and Hampstead, while they showed the largest excess in Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. During the four weeks ending March 1st the number of small-pox cases notified showed a further increase over the numbers in recent months; the greatest proportional prevalence of this disease was recorded in Holborn, Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. The number of small-pox patients under treatment in the Metropolitan Asylums hospitals, which had been 427, 666, and 1135 at the end of the three preceding months, had further risen to 1309 at the end of February; the weekly admissions averaged 390, against 110, 173, and 297 in the three preceding months. The prevalence of scarlet fever during February showed a considerable decline from that recorded in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in St. Pancras, Finsbury, Poplar, Battersea, Camberwell, and Lewisham. The Metropolitan Asylums hospitals contained 2250 scarlet fever patients at the end of the month, against 3186, 3080, and 2501 at the end of the three preceding months; the weekly admissions averaged 234, against 352, 297, and 266 in the three preceding months. A continued decline in the prevalence of diphtheria also was shown during February; this disease was proportionally most prevalent in St. Pancras, Islington, Stoke Newington, Hackney, Camberwell, and Lewisham. There were 1156 diphtheria patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 1504, 1369, and 1231 at the end of the three preceding months; the weekly admissions averaged 154, against 200, 160, and 167 in the three preceding months. The prevalence of enteric fever showed a slight increase during February; among the various metropolitan boroughs "fever" was proportionally most prevalent in Paddington, Hampstead, Holborn, Southwark, and Bermondsey. The number of enteric fever patients under treatment in the Metropolitan Asylums hospitals, which had been 245, 195, and 128 at the end of the three preceding months, had risen again to 143 at the end of February; the weekly admissions averaged 22, against 32, 21 and 18, in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Bethnal Green, Southwark, Bermondsey, and Greenwich. The 23 cases of puerperal fever notified during the month included five in Wandsworth, three in Camberwell, two in Paddington, two in St. Pancras, and two in Deptford.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various metropolitan boroughs, the deaths occurring in the public institutions of London having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending March 1st the deaths of 9105 persons belonging to London were registered, equal to an annual rate of 25·9 per 1000, against 20·0, 18·8, and 18·3 per 1000 in the three preceding months. The lowest death-rates last month in the various metropolitan boroughs were 19·1 in Hampstead, 20·0 in Deptford, 20·4 in Wandsworth, 21·0 in Lewisham, and 21·8 in Battersea; the highest rates were 30·3 in St. Marylebone, 30·6 in Shoreditch, 31·3 in Bethnal Green, 33·6 in Holborn, and 34·6 in Finsbury and in the City of London. The 9015 deaths from all causes included 257 from small-pox, 229 from measles, 49 from scarlet fever, 128 from diphtheria, 154 from whooping-cough, 45 from enteric fever, one from simple continued fever, and 34 from diarrhœa; in all, 897 deaths were referred to these principal zymotic diseases. The lowest death-rates last month from these diseases were 1·1 in Battersea and in Camberwell, 1·2 in Chelsea, 1·4 in Bermondsey, and 1·5 in Deptford and in the City of London; and the highest rates were 4·3 in Paddington, 4·6 in Bethnal Green, 4·9 in Finsbury, 5·3 in Stepney, and 7·2 in Shoreditch. The 257 fatal cases of small-pox showed a further considerable increase over the numbers recorded in recent months; the greatest proportional mortality from this disease occurred in Holborn, Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. The 229 deaths from measles were 40 in excess of the average number in the corresponding periods of the 10 preceding years; among the various metropolitan boroughs this disease was proportionally most fatal in Paddington, Kensington, Hammersmith, Fulham, St. Marylebone, and Finsbury. The 49 fatal cases of scarlet fever showed a slight decline from the corrected average number; this disease was proportionally most fatal in Hampstead, St. Pancras, Bethnal Green, Camberwell, Deptford, and Lewisham. The 128 deaths from diphtheria were considerably below the average number in the corresponding periods of the 10 preceding years; among the various metropolitan boroughs the greatest proportional mortality from this disease occurred in Fulham, St. Pancras, Islington, Finsbury, Shoreditch, and Lewisham. The 154 fatal cases of whooping-cough showed a decline of 78 from the corrected average number; this disease was proportionally most fatal in Stoke Newington, Shoreditch, Bethnal Green, Stepney, Lewisham, and Woolwich. The 46 deaths referred to "fever" were four in excess of the average number in the corresponding periods of the 10 preceding years; the highest "fever" death-rates last month were recorded in the City of Westminster, Hackney, Shoreditch, Bethnal Green, and Poplar. The 34 fatal cases of diarrhœa were 21 below the corrected average number; this disease was proportionally most fatal in Holborn, Shoreditch, Stepney, Poplar, and Greenwich. In conclusion, it may be stated that the aggregate mortality in London last month from these diseases was nearly 22 per cent. above the average.

Infant mortality in London during February, measured by the proportion of deaths among children under one year of age to registered births, was equal to 144 per 1000. The lowest rates of infant mortality were recorded in St. Marylebone, Stoke Newington, Hackney, the City of London, Southwark and Deptford; and the highest rates in Chelsea, St. Pancras, Finsbury, Poplar, Bermondsey, and Greenwich.

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING FEBRUARY, 1902.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1902.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.													
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
LONDON	4,579,107	1461	1150	830	—	175	4	23	355	—	4018	11·4	257	229	49	123	154	—	45	1	34	897	2·6	9105	25·9	144
West Districts.																										
Paddington	145,107	22	16	23	—	8	—	2	10	—	81	7·3	6	34	—	5	1	—	1	—	1	48	4·3	225	25·6	147
Kensington	177,605	11	30	4	—	3	1	—	10	—	59	4·3	1	22	3	—	1	—	—	—	1	28	2·1	330	24·2	156
Hammersmith	114,210	19	15	20	—	3	—	1	8	—	63	7·2	—	14	1	2	—	—	—	—	—	17	1·9	217	24·8	124
Fulham	143,102	14	24	26	—	5	—	—	7	—	76	6·9	5	18	—	6	2	—	—	—	—	31	2·8	262	23·9	151
Chelsea	74,018	8	6	5	—	2	—	—	6	—	27	4·8	1	1	1	2	2	—	—	—	—	7	1·2	157	27·7	190
City of Westminster	180,800	51	26	19	—	8	—	—	6	—	110	7·9	8	6	2	4	—	—	4	—	2	26	1·9	378	27·3	152
North Districts.																										
St. Marylebone	132,069	37	27	22	—	6	—	—	10	—	102	10·1	6	26	1	4	1	—	2	—	1	41	4·0	307	30·3	120
Hampstead	83,743	2	17	5	—	5	—	1	4	—	34	5·3	—	5	3	—	2	—	1	—	—	11	1·7	123	19·1	140
St. Pancras	235,586	56	75	86	—	12	—	2	20	—	251	13·9	10	7	5	12	3	—	3	—	—	40	2·2	516	28·6	174
Islington	337,268	25	98	92	—	9	—	1	25	—	248	9·6	1	7	3	17	13	—	3	—	1	45	1·7	653	25·2	141
Stoke Newington	51,700	11	15	19	—	—	—	—	4	—	49	12·4	1	—	1	1	3	—	—	1	—	7	1·8	88	22·2	50
Hackney	221,926	39	56	67	—	5	—	1	28	—	196	11·5	6	2	1	9	10	—	5	—	1	34	2·0	399	23·4	113
Central Districts.																										
Holborn	58,535	43	13	3	—	4	—	—	4	—	67	14·9	9	2	—	—	—	—	—	—	2	13	2·9	151	33·6	129
Finsbury	100,487	57	31	17	—	3	1	1	9	—	119	15·4	12	16	1	6	3	—	—	—	—	38	4·9	267	34·6	184
City of London	25,598	5	6	6	—	1	—	—	2	—	20	10·2	1	1	1	—	—	—	—	—	—	3	1·5	68	34·6	87
East Districts.																										
Shoreditch	117,980	147	17	22	—	2	1	—	8	—	197	21·8	40	5	—	5	9	—	3	—	3	65	7·2	277	30·6	138
Bethnal Green	129,889	82	27	22	—	6	—	1	17	—	155	15·6	14	3	3	3	19	—	4	—	—	46	4·6	312	31·3	157
Stepney	300,561	366	84	46	—	16	—	—	23	—	535	23·2	73	5	—	10	24	—	2	—	9	123	5·3	690	29·5	150
Poplar	169,214	121	66	31	—	8	—	1	9	—	236	18·2	18	4	2	4	7	—	4	—	4	43	3·3	353	27·2	172
South Districts.																										
Southwark	206,825	62	69	26	—	12	1	—	27	—	217	13·7	10	11	2	8	7	—	4	—	2	44	2·8	453	28·6	120
Bermondsey	130,218	29	26	11	—	9	—	—	16	—	101	10·1	2	1	2	2	6	—	1	—	—	14	1·4	287	28·7	159
Lambeth	305,102	75	90	29	—	14	—	—	19	—	227	9·7	11	12	3	2	11	—	2	—	2	43	1·8	639	27·3	142
Battersea	171,401	24	60	24	—	3	—	—	18	—	129	9·8	5	5	1	—	3	—	—	—	—	14	1·1	226	21·8	134
Wandsworth	241,810	22	53	47	—	9	—	5	15	—	151	8·1	3	14	—	7	3	—	2	—	—	29	1·6	378	20·4	156
Camberwell	282,775	34	113	69	—	3	—	3	23	—	245	12·2	4	—	6	4	7	—	1	—	1	23	1·1	473	23·5	134
Deptford	111,577	13	32	22	—	3	—	2	5	—	77	9·0	4	—	3	2	2	—	1	—	1	13	1·5	171	20·0	79
Greenwich	98,013	15	29	12	—	5	—	1	12	—	74	9·8	4	1	—	3	2	—	—	—	2	12	1·6	173	23·0	173
Lewisham	132,432	8	42	33	—	6	—	1	7	—	97	9·5	1	1	3	9	7	—	1	—	1	23	2·3	213	21·0	150
Woolwich	119,556	21	18	22	—	4	—	—	6	—	71	7·7	1	6	1	1	6	—	1	—	—	16	1·7	209	22·8	128
Port of London	—	2	1	—	—	1	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: J. Crowley to the *Bulwark*; R. E. Biddulph to the *Hibernia*, and W. G. K. Barnes to the *Duke of Wellington*. Staff Surgeons: R. F. Bowie to the *Gibraltar*; E. St. M. Nepean to the *Empress of India*; W. G. Stott to the *Melampus*; R. Hickson to the *Prince George*; J. Andrews to the *Monarch* for Ascension Hospital; J. McC. Martin, D.S.O., to the *Cambridge*; E. H. Meaden to the *Amphitrite*; and P. V. Jackson to the *Charybdis*, additional. Surgeons: W. E. Marshall to the Haulbowline Hospital; T. B. Shaw, lent to Portsmouth Division R.M.L.I.; A. C. Renwick to the *Bulwark*; H. L. Penny to the *Benbow*; L. S. Whitwam to the *Dwarf*; A. A. J. McNabb to the *Collingwood*; L. E. Dartnell to Hong-Kong Hospital; A. T. Wysard to the *Ganges*; C. L. W. Bunton to the *Forte*, when recommissioning; F. D. Lumley to the *Amphitrite*; J. Whelan to the *Partridge*; and S. Conner to the *Empress of India*.

IMPERIAL YEOMANRY (IN SOUTH AFRICA).

John Henderson Wright to be Medical Officer, with the temporary rank of Captain. Dated Jan. 14th, 1902.

Arthur Ricketts, C.M.G., to be Medical Officer, with the temporary rank of Captain. Dated Feb. 4th, 1902.

T. J. S. Suffield to be Medical Officer, with the temporary rank of Captain. Dated Jan. 20th, 1902.

John Edward Williams to be Medical Officer, with the temporary rank of Captain. Dated Feb. 3rd, 1902.

ROYAL ARMY MEDICAL CORPS.

Major D. R. Hamilton proceeds to Colchester for temporary duty. Lieutenant-Colonel E. L. Maunsell is appointed to the charge of the Station Hospital at Fyzabad. Lieutenant-Colonel P. J. Dempsey takes over charge of the Station Hospital, Portsmouth.

INDIA AND THE INDIAN MEDICAL SERVICES.

The King has approved of the following promotions among officers of the Indian Staff Corps:—To be Lieutenants (dated Jan. 29th, 1902): Alfred Ernest John Lister, Thomas Samuel Beauchamp Williams, Samuel Herbert Lee Abbott, Alexander William Greig, Richard Ernest Lloyd, John Edmund Clements, Hugh Barkley Steen, Ernest Bisset, Richard James Bradley, James Woods, Alexander William Overbeck-Wright, David Munro, Ernest Archibald Loch, Thomas William Harley, William John McCoy, Roger Lionel Hagger, Robert Markham Carter, Roger Durrant Willcocks, Thomas George Ferguson Paterson, Dodington George Richard Shurton Baker, Jaspar Robert Joly Tyrrell, Dewan Ganpat Rai, Robert Macpherson Barron, William Reith John Scroggie, Lewis Patrick Farrell.

The King has also approved of the retirement from the service of the undermentioned officers:—Madras Establishment: Lieutenant-Colonel Arthur Theophilus Lodge Patch, dated June 19th, 1901. Lieutenant-Colonel Jamshedji Kharshedji Kanga, dated Dec. 14th, 1901. Bengal Establishment: The retirement of Lieutenant-Colonel E. Bovill has effect from Nov. 9th, 1901, and not as notified in the *London Gazette* of Jan. 17th, 1902.

IMPERIAL YEOMANRY.

The under-mentioned officers resign their commissions and receive new commissions subject to the provisions of the Militia and Yeomanry Act, 1901, each retaining his present rank and seniority:—

Derbyshire: Surgeon-Lieutenant R. M. Wilson.

Suffolk (The Duke of York's own Loyal Suffolk Hussars): Surgeon-Lieutenant-Colonel A. Cooper.

Bedfordshire: Henry Skelding to be Surgeon-Lieutenant.

Royal East Kent (The Duke of Cannaught's Own): Robert Leishman Moorhead to be Surgeon-Lieutenant.

Shropshire: Surgeon-Major J. D. Lloyd to be Surgeon-Lieutenant-Colonel.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers):—9th Lancashire: John Holt Marsh to be Surgeon-Lieutenant.—1st North Riding of Yorkshire: Surgeon-Lieutenant P. B. G. Considine resigns his commission.

Submarine Miners (the Tees Division).—Surgeon-Captain J. W. Edwards resigns his commission.

Rifle: 4th (Nottinghamshire) Volunteer Battalion, the Sherwood Foresters (Derbyshire Regiment): Brigade-Surgeon-Lieutenant-Colonel F. H. Appleby is seconded whilst holding the appointment of Senior Medical Officer to the Sherwood Foresters Voluntary Infantry Brigade. 1st (Ross Highland) Volunteer Battalion, Seaforth Highlanders (Rossshire Buffs, the Duke of Albany's): The under-mentioned officer resigns his commission: Surgeon-Lieutenant D. Lamond, dated 12th March, 1902.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Woolwich Companies: Major F. L. Stephenson to be Lieutenant-Colonel, and to command under paragraph 55A Volunteer Regulations.

SOUTH AFRICAN WAR NOTES.

Colonel Townsend, R.A.M.C., is reported dangerously wounded in the shoulder at Klip Drift on March 7th but doing well March 10th.

Lieutenant J. Clarke, R.A.M.C., and Civil Surgeon Stephen are on passage home in the s.s. *Ulstermore* which left Cape Town on March 1st. Lieutenant W. C. Stevenson, R.A.M.C., and Civil Surgeon Stoney are on passage home in the s.s. *Guelph* which left Cape Town on the same date.

DEATHS IN THE SERVICES.

Surgeon-Major Francis Turnbull, I.M.S. (retired), aged 82 years, at his residence in London.

Lieutenant-Colonel Arthur Robert Wyatt Sedgefield, I.M.S., on March 8th, at Sanawar, Panjab, India, aged 47 years. He was appointed surgeon in 1880 and was promoted lieutenant-colonel in 1900.

Fleet-Surgeon Ernest Elliott (retired) on Feb. 27th, at Southsea, aged 84 years. He was appointed surgeon in the navy in 1841.

Brigade-Surgeon-Lieutenant-Colonel Edward Ambrose Fitz-Gerald, late I.M.S. (retired), aged 67 years, on March 9th, in London.

Percy Reginald Fort, M.R.C.S. Eng., L.R.C.P. Lond., Civil Surgeon to the South African Field Force, who died at Standerton on Feb. 10th from an attack of enteric fever, was born in 1874 and was educated at the Merchant Taylor's School, London, and at St. Mary's Hospital Medical School. After qualifying in 1900 he was appointed a medical officer at the York Dispensary, but resigned that post in order to take service in connexion with the war. He sailed for South Africa in July, 1901, doing duty on the hospital ship *Simla* and made two voyages in the same vessel. He was then appointed to the medical charge of the 8th Mounted Infantry in Colonel Rawlinson's column and it was while so employed that he contracted the fever from which he died.

SCARLET FEVER ON H.M.S. "IMPREGNABLE."

The scarlet fever epidemic on the training ship *Impregnable* at Devonport not having diminished it has been decided to transfer the boys and crew to the *Inconstant*, overflow ship attached to the naval depôt, in order to allow the thorough disinfecting of the *Impregnable*.

A display of Military and Musical Drill by selected companies of the Church Lads Brigade will take place at the Guildhall on Tuesday, April 15th, at 8 P.M., when the Duke of Fife will preside.

PRESENTATION TO A TEACHER OF DEAF-MUTES.—An interesting meeting of adult deaf-mutes of both sexes and their sympathisers was held on Sunday afternoon, March 9th, in the New Synagogue, Great St. Helen's, Bishopsgate, E.C., for the purpose of presenting to the deaf-mutes' former teacher, Dr. S. Schöntheil, an embossed silver bowl as a testimonial to his important services in improving the methods of teaching the deaf and dumb and promoting the efficiency of their teachers. Dr. S. Schöntheil was for 22 years headmaster of the Jews' Deaf and Dumb Home, formerly at Notting Hill but now at Wandsworth Common, and since his resignation in 1893 has been devoting himself to the education (primary and secondary) of deaf and dumb children of the upper and middle classes.

Correspondence.

"Audi alteram partem."

THE SUBJUGATION OF SMALL-POX: NOTIFICATION.

To the Editors of THE LANCET.

SIRS,—The small-pox question, as discussed by you in your leading article in THE LANCET of March 8th, p. 678, carries my mind a long way back in my own experience. In 1863, very shortly after my appointment to be medical officer of Glasgow, we were confronted with a rising epidemic of small-pox which had to be met by means largely extemporised and by a preventive staff—not to speak of a very inchoate state of the local and general sanitary acts—very inferior to those now in operation. Nevertheless, by diligent and specially organised house-to-house vaccination and revaccination (taking this, for the nonce, altogether out of the hands of the Poor-law authorities); by public disinfection (then freely carried out at the public expense for the first time); by segregation of the sick and careful watching (as far as was possible to us) of suspects; we had the satisfaction, not only of keeping down and ultimately extinguishing this particular epidemic, but of laying the foundations of a preventive organisation which, improved by experience, succeeded in keeping Glasgow for a good many years absolutely free from small-pox. It was apparent to us at that time, and was confirmed later by Dr. J. B. Russell, that the most dangerous cases from the sanitarian's point of view were not the severe but the mild cases, and particularly those in which the diagnosis was obscure and in which, after a brief premonitory fever and a few insignificant-looking spots, all the symptoms subsided, so that the patient was able to go about his ordinary occupation and perhaps never came to know what was the disease he had at all. I remember a case of this kind among what may be called the better ranks (socially speaking) which occurred after I had ceased to be medical officer of the city but which was carefully traced out in detail by my successor, Dr. Russell. A gentleman connected with one of the most flourishing shops in the most *shoppy* street in Glasgow (Buchanan-street) came home from Paris with what was supposed to be a feverish cold. He sent for his private medical adviser, who arrived, prescribed, and left him under the impression above-mentioned, and did not (as I was informed) visit him again. Next day a few insignificant acne-like spots had appeared on the face, but all discomfort was gone and the patient regarded himself as quite well, *taking no precautions whatever*. To this single case, moving in the best society, I was credibly informed that from 12 to 20 cases subsequently were actually traced in different quarters; and in all probability those so traced were only a fraction of the whole. Now it must be admitted that although "notification" was in those days unknown, or at all events not practised, it might very well have been that an isolated case like that of Mr. B might have escaped notification without much blame to anyone. But this, and other incidents which I have always had in mind since, have pressed home with me the conclusion that I have endeavoured (hitherto, I fear, unsuccessfully) to ventilate in your columns; that in "notification" it is a mistake to stipulate for the *name* of the disease as the essential fact to be notified, and that the mere suspicion or reasonable presumption of an infectious disease, however arising, ought to be accepted as a valid notification in law and should be invited, if not compelled, not only from the medical man in attendance but from all who are interested or implicated in the case, as a basis for fuller investigation. Suppose that the medical attendant of Mr. B had paid him just one more visit it is very probable that, if not well versed in small-pox, he might still have had a doubt as to the disease; but he could hardly have seen even the few traces of an exanthem without suspecting *something* infectious, and that something, I would say, he should be held bound to communicate *at once*, leaving the completion of the diagnosis. Perhaps it might have been chicken-pox? What then? Because chicken-pox has not been enumerated (wrongly, in my opinion) in the Notification Act, is it expedient that all the ambiguous cases which occur should wait for complete verification before being notified as small-pox? I am glad to read in your leader that the authorities in London have come to a different conclusion upon this point, and I hope that before they are done they will see the expediency of bringing about some further reforms in the Notification Act in accordance with the views that I have submitted.

I am, Sirs, yours faithfully,

Edinburgh, March 8th, 1902. W. T. GAIRDNER.

THE HOUSING OF THE POOR.

To the Editors of THE LANCET.

SIRS,—The valuable work which has been done during the past 20 years by the Mansion House Council on the Dwellings of the Poor is not too well known. By voluntary effort it has successfully grappled with the most pressing need of our time—the housing of the poor. It has received the approval of the most earnest and practical of the men and women of the day, and it has won the confidence of the poor themselves. The numerous urgent letters constantly received by the Mansion House Council demonstrate the necessity of its continued existence.

I have to ask the public for funds in order that this useful work may be efficiently maintained. The help solicited is pressingly needed and I trust may be heartily and generously rendered. To those who have not hitherto contributed to the movement, it may be well to say that the health and well-being of the very poor and the increased comfort and improved sanitary condition of the dwellings of the wage-earning class are some of the many benefits which have resulted from the Council's labours.

Contributions may be sent to me here or to Messrs. Prescott, Dimsdale, and Co., the bankers of the society, 50, Cornhill, and will be duly acknowledged.

I am, Sirs, yours faithfully,

JOSEPH C. DIMSDALE,
Lord Mayor.

The Mansion House, London, E.C., March 10th, 1902.

P.S.—A report of the Council will be forwarded to anyone interested in the subject upon application to the honorary secretary (Mr. John Hamer, J.P.), 31, Imperial-buildings, Ludgate-circus, E.C.

THE PSYCHIATRIC CLINIC.

To the Editors of THE LANCET.

SIRS,—It is reassuring to note that the position assumed, in THE LANCET of March 1st, p. 622, by your Scottish correspondent in reference to the proposed psychiatric clinic in Edinburgh is not in accordance with your deliberate finding on this important question in THE LANCET of Feb. 1st, p. 318. The question clearly does not affect Edinburgh alone, but must sooner or later be discussed at the various general hospitals of the country where there is scope for the treatment and teaching of psychological medicine. It is impossible within the limits of a brief letter to place the facts before your readers with all relevant details. Broadly, this country is not abreast of continental practice; an important class of patients is not reached; a field of medical observation and research is untilled; a definite benefit is withheld from the country at large so long as these proposals are neglected. It is not a new question. When the Edinburgh Royal Infirmary was being built Sir Arthur Mitchell appealed for the institution of a special department for mental disorders; 30 years ago Sir John Sibbald urged that such a course was desirable; and from time to time others have not been unmindful to plead for the poorer class of mental patients on the lines indicated.

I traverse the observations and conclusions of your correspondent from first to last, and regret that at this time of day they should have found a place in the authoritative columns of THE LANCET. The meeting of the Medico-Chirurgical Society was widely representative, and the resolution of approval proposed by Sir John Batty Tuke was adopted *nem. con.* Indeed, there were no objections raised in discussion except on questions of finance, which, of course, must be dealt with after the principle is adopted. While financial considerations are of importance to the managers of the infirmary and to the promoters, and constitute difficulties to be surmounted, the purport of the medical

meeting was to debate the propositions from the medical point of view. The result was entirely satisfactory to those of us who have long been convinced and importunate for the scheme. If it were in the mind of anyone at the meeting to propose that general physicians should be appointed, to the exclusion of specialists, in attendance on cases of incipient and transitory cases of mental derangement, why did he not speak out? For myself I would not have act or part in the matter if the department of medicine to which I have given my life were to be passed over in that contemptuous fashion. The suggestion is an evil echo of the bad old days. You will remember that the proposals of the London County Council for the establishment of a psychiatric hospital were wrecked on this rock of offence, and right gladly and willingly I stood in with the wreckers. What is known of insanity (the various physical diseases issuing in mental disorder) is the outcome of specialist work and our proposals to enlarge that work rest upon our claims as physicians and on no other ground.

Will you persuade us that ophthalmic operations are to be handed over to the general surgeon? Or will you offer us appointments in gynæcological spheres of interest? The proposition is absurd. It has ever been a stumbling-block to the British public that a man may do more than one thing well. Herein, indeed, lies a vulgar error. So, there was much wisdom shown by a well-known surgeon when he issued his powerful etchings with the Horatian quotation :—

"O laborum
Dulce lenimen."

Thus, the asylum physician is obscured in his palatial environment even to his fellows, who should really know better.

Too much is made of the asylum "stigma." As years pass these institutions are becoming recognised as true hospitals, and it is commonly admitted that hundreds are being sent to them who formerly would never have passed their doors. I will not labour that point. The same "stigma" attaches to tuberculosis or cancer.

Any innovation is received with diffidence. It must often win its way through contempt and objurgations, but if it is founded on justice and common sense it will in the end be generally accepted. This proposal *is* founded on justice. If a man be rich enough to command the services of a consultant in mental disorders he is in no difficulty. If he be poor that door is not open to him. Your correspondent writes in ignorance of what has been done at St. Thomas's Hospital by the establishment of an out-patient department in psychiatry years ago. It is a success; still more valuable would be an in-patient ward. It has been a success; and we press for the logical development.

I shall pass over the establishment of psychiatric clinics at all the German universities and briefly refer to what has been done at Copenhagen, where the circumstances are nearly similar to those of Edinburgh. Many years ago, when the Hospital Commune was rebuilt, two pavilions were erected for the reception of mental and neurological patients, and these pavilions were placed under the care of Professor Pontoppidan. There, again, the results have been eminently satisfactory. Many cases never proceed to the asylums of Denmark; the study and investigation of mental maladies have been notably advanced; and the students of the University see cases which would otherwise have escaped their notice. Or, to come nearer to Edinburgh, the Barony Parish of Glasgow established observation wards in their poorhouse under the care of a physician of experience in asylum life, with the result that a separate institution is now to be built. Glasgow does not advance on theoretical considerations only, the practical results of tentative experiments appeal to that business community, and the Barony wards are therefore being developed as a special hospital. Will Edinburgh lag behind? I think not. The traditions of its medical school are entirely favourable to progress and efficiency, to maintain a position in the front rank. We desire to see a psychiatric clinic established in the Royal Infirmary for the public benefit, for the advancement of science, and for the whole-hearted instruction of medical students. To that end the physician and teacher must be a man who has devoted himself to the study of these disorders, and no other. He must be a man of proved ability in observation, research, and expression—in short, a specialist of eminence. That is fundamental. The question of ways and means, although important, is not a question of principle. It falls to be considered with other primary details.

In my relations with general practitioners, especially those working in country districts, I stand appalled by the magnitude of their responsibilities. Face to face with problems of life and mind, they emerge with credit hardly won and often slightly recognised. The range of medical and surgical work is vast and daily more complicated in practical difficulties. Perhaps to those of us who are engaged in specialised work this is more apparent. Yet a specialist must ever be on guard against the limitations of his work and keep in touch with the great world of medicine. Assuredly he will not reach success if these limitations overmaster him. Here is a scheme which will knit psychiatry to general medicine where hitherto we have had to deplore loose ends. On these grounds I ask you to continue your powerful support. I am, Sirs, yours faithfully,

Perth, March 1st, 1902. A. R. URQUHART.

To the Editors of THE LANCET.

SIRS,—In the remarks on the special meeting of the Edinburgh Medico-Chirurgical Society with reference to this matter the observation is made that if such a clinic is established it should be under the care of a "general physician." On this line of reasoning the eye wards should be under the care of a general surgeon. The argument that if an alienist had charge the wards would be regarded as "mad wards" is, I think, erroneous. At St. Thomas's Hospital, where for several years past an out-patient department for mental diseases has been established, I believe that there is very little feeling amongst the patients that they are regarded as mad or that others regard them as "mad" patients; the recognition of mental disease as associated with other disease has, I believe, already grown and will continue to grow.

In correspondence relating to the London reception-houses recently proposed I note that the workhouse infirmaries claim that they already supply the want, but it must be borne in mind that a large proportion of the class of cases who would be saved from complete mental breakdown by a few days' treatment in a psychiatric clinic or reception-ward will not voluntarily go to the Poor-law infirmary or to the asylum as boarders. They and their friends often beg piteously to be admitted to the hospital, but this in the absence of a specially organised ward it is impossible to recommend.

"Insanity is a preventable disease" and its prevention lies in getting those who are evolving it to come under skilled care in the incipient stage. If an alienist is needed to treat the fully-developed disease, as admitted to the asylums, still more is one required to detect and to treat it in its earliest, often most insidious, stages. If a tenth part of the enormous outlay on palatial asylums were devoted to the prevention of mental disease, some of these grand institutions, at once the pride and shame of civilisation, might in a few years be eligible for other purposes.

Alienist physicians have been frequently attacked for many years past as being unscientific, and during that time I have accumulated a large number of notes of cases which have ultimately come under my notice after treatment by the "scientific and even eminent physician." If I could submit them to you, Sirs, I believe that you would agree with me that, at least in many instances, a grievous wrong had been inflicted by persons unskilled in mental disease undertaking its treatment. I therefore demur to the psychiatric clinic being placed under a general physician.

I am, Sirs, yours faithfully,

March 10th, 1902. HENRY RAYNER, M.D. Aberd.

SMALL-POX INFECTION BY MEANS OF RAW COTTON.

To the Editors of THE LANCET.

SIRS,—The following case illustrates, I venture to think, an unusual method of infection in cases of small-pox. The patient, a young man, aged about 28 years, worked in a large cotton spinning mill here, opening the bales and feeding them into a machine for the first stage in the spinning process. He worked in a large room with only one other man. On a certain date he began to feel ill—had headache, slight feverishness, and marked backache; three days later a papular rash appeared and his medical attendant was called in. For two days the medical attendant was uncertain as to the nature of the illness, and then fearing the worst asked me to see the case with him. At that stage there was still some little doubt as to the precise nature of the ailment, but there

were evidences of vesiculation and umbilication. We decided that the case was probably small-pox and the patient was therefore isolated in hospital and the remainder of the family were vaccinated. During his stay in the hospital he completed an undoubted, though mild, case of true small-pox. The correctness of the diagnosis was further clinched by the fact that two attempts at vaccination were made when the skin had practically regained its normal condition, and both had failed. The closest possible inquiry failed to reveal any local cause of infection, and, indeed, no case of small-pox had occurred in this neighbourhood for about a year previously to this, nor has any case arisen up to the present time since then. I made inquiries at the patient's workplace and through the courtesy of the managing director saw the process in which he was engaged. I was also kindly furnished with the address of the place from which the cotton was imported and on writing to the State health officer of that locality I received the following reply:—

Quarantine Department, Austin, Texas.

DEAR SIR,—Yours of the 15th instant received. Small-pox is quite prevalent on the cotton plantations, not only of Texas, but of all the southern States. It is of such a mild form as a rule as to not require medical attention, and in many cases the victim will pursue his ordinary work in the cotton-field throughout the attack. That the cotton is thereby infected cannot be doubted, as the workmen of several cotton-gins have been infected through the cotton. Wherever the health authorities become aware of the infection of cotton it is either disinfected or destroyed. But you will readily see by the preceding that there will be many instances of infection that will not come to their knowledge. If it will not appear presumptuous I will make the suggestion that your factory operators should all be thoroughly vaccinated. Very truly,

(Signed) A. F. BLUNT, M.D.,
State Health Officer of Texas.

The last remark of Dr. Blunt is worthy of recommendation to any medical officer of health whose energy is likely to prove equal to the demand.

I am, Sirs, yours faithfully,

MEREDITH YOUNG,
Medical Officer of Health of the County Borough of Stockport.

Stockport, March 5th, 1902.

CARDIAC PAIN.

To the Editors of THE LANCET.

SIRS,—In the report in THE LANCET of March 1st (p. 592) of the discussion upon Dr. E. Markham Skerritt's paper upon cardiac pain read before the Medical Society of London more than one speaker is mentioned as having referred to the occurrence of pain in aortic regurgitation, but apparently it was not suggested that the most important lesion in these cases is probably the same as in those in which there is no valvular disease. The aorta immediately above the aortic valve is diseased in the majority of fatal cases of aortic regurgitation occurring in the later half of life, the orifices of the coronary arteries are often obstructed, and as a consequence of this obstruction there is fibrosis of the cardiac muscle. It is probable that the disease of the heart-wall rather than the valvular lesion is mainly responsible for the attacks of cardiac pain. As Dr. H. D. Rolleston remarked, in cases of aortic stenosis due to calcareous diseases of the aortic valve the aorta is generally healthy, yet fibrosis of the cardiac muscle may also exist in these cases, and when pain is associated with aortic stenosis fibroid degeneration of the myocardium is probably present. The general opinion of the meeting appears to have been that severe cardiac pain is not common. This is doubtless true, but the nature of the milder cases is probably very similar to that of the more severe. In cases of cardiac pain associated with anæmia, and not uncommonly in those cases which may be attributed to the referred pains of dyspepsia, the various situations in which pain is felt are the same as those of angina pectoris, even to its extension to one or both arms. There are also the same localised areas of tenderness, and an interesting feature which I do not remember to have seen mentioned is the occasional presence of slight pain in swallowing referred to the region of the lower third of the œsophagus, no doubt where it passes behind the pericardium. In anæmia we know there is temporary weakness of the cardiac muscle, and it is possible that in dyspepsia also much of the pain considered to be referred pain may indicate disturbance of the heart-muscle, not by reflex irritation, but as a consequence of poisoning by abnormal products of digestion. Why the pain should only occur in some people and in them be generally spasmodic is a wider question. It has been my intention here merely to suggest that in all cases of cardiac pain, whether slight or severe, there is either permanent lesion or temporary disturbance of the cardiac muscle.

I am, Sirs, yours faithfully,

THEODORE FISHER.

March 4th, 1902.

SMALL-POX AND VACCINATION.

To the Editors of THE LANCET.

SIRS,—In a recent issue you print, under the above heading, a letter from a correspondent suggesting that the Government should supply lymph to vaccinators. It will interest him to know that the New Zealand Government, through the Health Department, supplies medical men free not only with vaccine but with the various serums and antitoxins. Our Government also undertakes free bacteriological examinations of tissues, &c., and reports on the same to the sender. I am, Sirs, yours faithfully,

F. W. GALE, M.R.C.S. Eng., L.R.C.P. Lond., L.S.A.

Kaikoura, New Zealand, Jan. 20th, 1902.

THE DIPLOMA OF THE SPECTACLE-MAKERS' COMPANY.

To the Editors of THE LANCET.

SIRS,—It has been brought to my notice, as Master of the Spectacle-Makers' Company, that reports are circulated to the effect that candidates for the diploma of this Company are examined in sight-testing and that the diploma certifies that the holder is competent, by virtue of such examination, specially to undertake cases of refraction. I therefore wish to state most emphatically that the examination does not include sight-testing, but deals generally with theoretical and applied optics, spectacle-making and frame-fitting, heat and elementary mathematics, and so ensures that the holder has an intelligent knowledge of his trade.

Any holder of the diploma of the Spectacle-Makers' Company may carry on the general business of an optician in the ordinary way; but in reference to spectacle-fitting particularly he is bound by certain restrictions, as you may see by the inclosed copy of the declaration which he signs. Thanking you in anticipation of your publishing this statement, I am, Sirs, yours faithfully,

W. HART DYKE,
Master of the Spectacle-Makers' Company.

Temple-avenue, E.C.

SOCIETY OF LICENTIATES AND MEMBERS OF THE LONDON ROYAL COLLEGES.

To the Editors of THE LANCET.

SIRS,—I should esteem it a favour if you would allow me to make known through the columns of THE LANCET that the secretaries of the above society have this week posted to every L.R.C.P., M.R.C.S. who has not already a degree in medicine a copy of the petition to the Royal Colleges asking the Royal Colleges to consider the disabilities of their petitioners. The secretaries would be glad to receive signatures as soon as possible that the presentation may be proceeded with. As it is very important that the petition should be as numerously and as influentially signed as possible we hope that all Licentiates and Members will sign quite irrespective of whether they belong to the society or not. I am, Sirs, yours faithfully,

FREDERICK J. SMITH,
President and Treasurer of the Society.

Harley-street, W.

To the Editors of THE LANCET.

SIRS,—May I venture to ask what is the position of an L.R.C.P. Lond. with regard to the objects aimed at by the Society of Licentiates and Members of the London Royal Colleges? Is it necessary in order to become a member of the society to be the possessor of the conjoint diploma, and is he who holds merely the diploma of L.R.C.P. Lond., to be precluded from enjoying the benefits of the reforms which the society has been established to secure—if possible? The Royal College of Physicians of London used regularly to advertise that its diploma was a qualification in surgery as well as in medicine and midwifery, in fact, a *complete* qualification, and this claim, I fancy, has been established by the College

in the Law Courts. But so far as I can see those in a similar position to my own are now to be left

OUT IN THE COLD.

ACUTE SUFFOCATIVE PULMONARY ŒDEMA.

To the Editors of THE LANCET.

SIRS,—I think that the manner in which Dr. J. L. Steven has presented his criticisms in THE LANCET of March 8th, p. 698, is somewhat unfair to Laennec and calls for a word in reply. He states that Laennec is dealing with a catarrh affecting the mucous membrane of the lungs, whereas he (Dr. Steven) is describing a pulmonary œdema. Now, making allowance for the state of pathology in Laennec's time, it may be remarked that when Laennec says the "lungs" he means the lungs and not the bronchial tubes, for he expressly states that the symptoms are due to a sudden inundation of the lungs with fluid. It is therefore beyond cavil that Laennec is describing an acute pulmonary œdema. Then when the points of difference which Dr. Steven describes as existing between the affection described by Laennec and that described by himself are closely examined it will be found that there is only one of these which can be fairly maintained, and that is, as to the duration of the symptoms. The two others—viz., that the expectoration in his cases (1) began at once and (2) was expelled with a hawk—though their great importance does not appeal to my mind—are, nevertheless, quite compatible with Laennec's statement. Laennec says: "*While* the suffocation lasts ..... the expectoration, *if any*, is altogether pituitous." The words "while" and "if any" warrant the inclusion of cases in which pituitous expectoration was present from the very beginning. As to the "hawking"—well, that depends very much on the patient. Laennec says that there is little cough, and it is likely that he did not think it worth while to describe minutely the manner in which the fluid was expectorated, but he, at any rate, does not say that it was *not* hawked up. Dr. Steven also states that in one of his cases the suffocative symptoms and the expectoration ceased together, but in his second case there was catarrhal expectoration before the onset of the œdema which apparently continued right up to the patient's death. Therefore, as already said, the only point which holds is as to duration. But every disease differs in duration in different individuals; and will Dr. Steven or anyone else maintain that the duration of the symptoms in only two cases is enough to warrant the establishment of a totally different disease?

I am, Sirs, yours faithfully,

Henrietta-street, W., March 10th, 1902. A. G. AULD.

BEEF WORM IN THE ORBITAL CAVITY.

To the Editors of THE LANCET.

SIRS,—I am much obliged to your correspondent Dr. George Ferdinands for calling my attention, in THE LANCET of Jan. 25th, p. 260, to a case of "beef worm in the orbital cavity" recorded by Dr. F. Keyt in the *British Medical Journal* of Feb. 10th, 1900. Had I read Dr. Keyt's case I should obviously not have ventured the opinion that my own was unique. There is not, however, anything "singular," as Dr. Ferdinands seems to imagine, in my not having read Dr. Keyt's notes on his case, as I do not take in the *British Medical Journal* and in this remote part of the world have no opportunity of seeing it. I am sorry that Dr. Ferdinands's experience should lead him to express such pessimistic views in regard to the decadence of what he terms the "fairer courtesies which always existed between members of our profession"; interesting as these views may be in themselves, however, I fail to see what bearing they have on the present case.

I am, Sirs, yours faithfully,

THOMAS W. F. GANN.

Corozal, British Honduras, Feb. 19th, 1902.

THE DISSEMINATION OF KNOWLEDGE CONCERNING VACCINATION.

To the Editors of THE LANCET.

SIRS,—Dr. Herbert W. G. Macleod, in THE LANCET of March 1st, p. 618, suggests public lectures illustrated by lantern slides showing typical cases of small-pox as a means of educating people on the importance and the advantages of vaccination. Such lectures have already been given in various places with very good success. We have prepared for such purposes some excellent slides showing typical cases of confluent, hæmorrhagic, discrete, and modified small-pox. They have been shown in Essex and are considered excellent. They will also be shown in Glasgow at an early date. We shall be glad to supply them at any time they may be wanted for public lectures by a medical man.

We are, Sirs, yours faithfully,

REBMAN, LIMITED.

129, Shaftesbury-avenue, Cambridge-circus, London, W.C., March 4th, 1902.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Plague Epidemic and the Famine.—Disastrous Seasons and their Effects on Crime and Mortality.—A Leprosy Conference.—Victoria Memorials.—Mandalay condemned as a Military Station.

THE mortality from plague throughout India fluctuates from week to week. Last week it rose to 15,165, and for the past seven days it has gone down to 12,695. The disease is increasing in Bombay city, Karachi, and Calcutta, but has declined in the districts of Bombay and the Punjab. The deaths recorded are Bombay city, 568; the Presidency, 3830; Karachi, 49; Madras Presidency, 514; Calcutta, 120; Bengal Presidency, 738; North-West Provinces, 1506; the Punjab, 4113; Mysore State, 611; Hyderabad State, 144; and Kashmir, 500. Fresh centres keep declaring themselves. At Bhusawal the disease is very virulent and three cases have occurred at Agra.

The famine is still increasing. The latest returns show 307,157 persons in receipt of relief, of which number the Bombay districts return 183,000.

From certain facts given in the report of the Bombay Presidency it would seem that bad seasons are responsible not only for distress but for much additional crime and mortality. For the year ending July 31st, 1901, cognisable offences increased by over 10,000, and dacoities and highway robberies were nearly doubled. The distress caused by the famine helped to make the mortality the most disastrous on record. While plague carried off only 33,000, cholera claimed 163,000 victims, diarrhœa and dysentery caused 218,000 deaths, and fevers 500,000. These adverse influences affected Bombay city, where for the year under notice the mortality was at the rate of 102·25 per 1000—the total deaths being 79,350. It will be remembered that the famine chiefly affected the Bombay Presidency.

At a recent conference of the Mission to Lepers at Wardha, Central Provinces, it was resolved that leprosy was and should be considered contagious. The meeting expressed itself strongly on the necessity of strict segregation of the sexes, both married and unmarried, and that no untainted child over three years should remain in a leper asylum with its diseased parents. These resolutions are the result of wide experience, for the operations of the society extend over 48 centres. It has 27 asylums and 14 houses for untainted children.

The memorials to Queen Victoria in the different cities of India will be very varied. In Bombay they talk of having a school for the blind, in Bangalore a technical institute, and in Lahore a statue. The Church party in Mandalay has managed to secure an English church, the erection of which, strange to relate, has been subscribed to by numerous sects and creeds. In Calcutta there is to be a memorial hall built of marble and of large dimensions, with extensive ornamental grounds. At Colombo it is proposed to have a school for the blind.

Mandalay is likely at last to be given up as a station for troops. One company of infantry has already been shifted to Maymyo. The former place has been frequently reported upon for its unhealthiness. The drainage and the situation of Fort Dufferin are bad and an epidemic of ague of a severe type occurred there in 1900, rendering one regiment completely unfit for active service. The cantonment is built practically within a marsh. The water-supply is liable to every possible contamination. The unhealthiness of Mandalay is not a thing of to-day—it has been known for years.

Feb. 21st.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Victoria University Question.

THE graduates and the undergraduates of the Victoria University are giving utterance to their hopes and fears in the daily press. Some lament the triple split of the "triplets," while others think it the best thing that could happen. Some of the graduates fear the loss of value that may ensue to the degree of an extinct university, while the undergraduates do not feel sure that the Manchester degree will equal that of the Victoria University. There was a meeting of women undergraduates of the Owens College on Feb. 21st at which the opposing views were very vigorously set forth. A proposition was moved—"That this meeting supports the action of the court of Owens College with reference to the university question." That is of course in favour of the happy despatch. An amendment was then moved as follows: "That we regret the action of University College, Liverpool, and would regret the dissolution of the Victoria University." This was carried by 46 votes to 29, and was also passed as the substantive motion. The lady who moved the original proposition then expressed a wish that her motion should also be voted on, and the (lady) chairman allowed this, with the result that it also was carried by 34 votes to 26. This somewhat amusing result shows that though no doubt these ladies are all admirably adapted for "home rule," it is not clear that they are equally well able or willing to submit to the rules and trammels of public meetings. As a sequel to this meeting one of the ladies wrote to the press "to explain that the contradictory conclusion apparently arrived at was due to the fact that the chairman persisted in putting the original motion to the meeting after the amendment had been carried as a substantive resolution, in consequence of which many refrained from voting." This was followed by a rejoinder from the "chairman," stating that the terms of the resolution and amendment were such that there was nothing inconsistent in voting for both.

The Cheadle Lunatic Asylum.

The Cheadle Asylum is a branch of the Manchester Infirmary and at the last annual meeting of the trustees its condition came under review. In 1881 there were in the asylum 186 patients and an indoor staff of 112. There are now 358 patients and an indoor staff of 212. Great improvements have been made during the past year in the main buildings and their surroundings with the very proper view of making them as attractive as possible. A new block is in course of construction at a cost of £20,000, to contain 70 persons, which is sure to be filled as soon as opened. The statistics given in the report would seem to show that drink and mental worry were the two chief causes bringing patients to the asylum. A large proportion are classed under the heads of "ladies" and "gentlemen"—i.e., persons of no occupation—and the chairman observed: "This would almost justify one in coming to the conclusion that idleness was a fertile source of mental worry and drink." It is probable that the Cheadle Asylum is the largest private institution of its kind in this country. It was announced at the annual meeting of the trustees of the infirmary held on Feb. 14th that Dr. T. Harris and Dr. Judson S. Bury were appointed visiting physicians to the asylum for the ensuing year.

The late Dr. D. J. Leech.

An interesting event took place in the Christie Library of Owens College on March 4th. On behalf of a number of subscribers Dr. J. Dreschfeld presented to the College a portrait of the late Dr. D. J. Leech, Professor of Materia Medica and Therapeutics. He spoke of the services rendered by Dr. Leech to the college through a long course of years, of his scientific attainments, his professional qualities, and his private character, and said that he did much to make the college and the medical school what they are to-day. Mr. Alderman Thompson, speaking for the college, "accepted most thankfully the portrait of one whom they all respected, loved, and revered." He alluded to the time when the relations between the infirmary and the Owens College were a little strained, and said that at that difficult time Dr. Leech did much to avert the danger of rupture. Mr. Alfred Hopkinson, the Principal, expressed sincere thanks to the subscribers, who comprised professional men, patients of Dr. Leech, and former pupils, not only in the United Kingdom, but also in the colonies and America, for the action they had taken. The portrait, painted by Mr. T. Harcourt, is a very successful one although it had to be painted from the study of photographs.

Fatal Electric Shock.

In view of the interest which is felt just now in the subject of fatal electric shocks it may be worth while to mention a case reported from Sheffield. A man who was an electrician's labourer went to the theatre with a companion, and in the lavatory, in a joke, got hold of an electric bracket with both hands when it gave way and he "received the full current of 200 volts. He shouted to his companion who pulled him down." "Doctors were called in," but he died in about 10 minutes. At the inquest, held on March 3rd, the opinion was expressed that "had he taken hold of the bracket with one hand he would only have received a shock, but as he had hold by two hands there was a complete circuit of the current through his body." If this report is accurate the case is in marked contrast—a charge of 200 volts being fatal—to one mentioned in Mr. Aspinall's paper in the last issue of THE LANCET, where a man received a 2000-volt shock from hand to hand and came round without assistance in about 25 minutes.

March 11th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Small-pox.

THE district of Ystalyfera, where the first cases of small-pox in South Wales occurred at the beginning of the year, is now quite free from the disease. Six fresh cases have been reported in Swansea, one patient being the chief sanitary inspector. There have been three deaths in Swansea up to the present time. Isolated cases of the disease have also occurred during March in Merthyr, Bangor, and Ebbw Vale.

The Supply of Vaccine Lymph.

The Swansea and the Pontypridd boards of guardians have decided to supply glycerinated calf lymph to their public vaccinators when the Local Government Board supply is insufficient, but the Bridgend board, in a more niggardly spirit has refused to provide any. It is a great pity that the Local Government Board was not more precise in the communication addressed to boards of guardians which stated that the Board would be prepared to sanction any reasonable expenditure incurred in the purchase of lymph required by public vaccinators.

Notification of Phthisis.

The Local Government Board has suggested to the Llangyfelach Rural District Council that a scheme of voluntary notification of cases of phthisis should be adopted within the council's area in preference to adding the disease to those compulsorily notifiable under the Infectious Disease (Notification) Act, 1889.—The Oystermouth Urban District Council has decided to take steps to procure the notification of cases of phthisis occurring within its district.

The Sale of Food and Drugs Act at Bristol.

During 1901 there were submitted to the analyst of the city of Bristol 732 samples of food, &c., a proportion of one sample to 449 persons in the city. Of the 259 samples of milk taken 18 were condemned, and 18 of the 377 samples of butter examined were found to be impure. Convictions ensued in all these instances except one where a warranty was produced. There was no adulteration found in any articles examined except milk and butter. For the Departmental Committee on Food Preservatives 61 samples of food were taken in Bristol and 26, or 42·6 per cent., were found to contain preservatives.

Bristol Royal Hospital for Sick Children and Women.

This excellent institution, which has accommodation for over 100 patients, is in a much better financial position than it was in a year ago. For several years the expenditure has exceeded the income by about £800 yearly, but a large bazaar organised by the Duchess of Beaufort in the summer of 1901 not only cleared off the accumulated debt of previous years, but left the managers with an adverse balance at the end of 1901 of only

£67. In a city of the world-wide reputation for philanthropy possessed by Bristol there ought not to be any difficulty in securing a sufficient sum to meet the annual expenditure of £4600. The number of in-patients treated in 1901 was 608, or 23 fewer than in 1900, the reduction being due to the closing of the wards in the spring in consequence of outbreaks of scarlet fever and diphtheria. In the out-patient department 4414 patients were treated, an increase of nearly 200 over the number in the previous year. In the dental department 661 patients received treatment. There are in the hospital 34 cots either endowed or supported by special subscriptions.

The Workmen's Compensation Act.

At the Cardiff County-court on March 7th, before his Honour Judge Owen, a claim for compensation was made by a widow against a firm of building contractors for the death of her husband, aged 65 years, a stonemason in their employ. The evidence showed that the deceased was at work on Sept. 30th, 1901, when an electrically-driven crane collapsed and fell. He was so much frightened that although the nearest part of the crane to him at the time of the accident was 55 feet away he died from heart failure on Nov. 22nd. The facts were admitted, but it was contended that the applicant was not entitled to compensation for the results of an accident or shock from such an accident unless actual physical injury had been sustained. The judge held otherwise and awarded the widow £156.

March 11th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal Edinburgh Asylum for the Insane.

THE statutory annual meeting of the corporation of the Royal Edinburgh Hospital for the Insane was held on Feb. 24th in the city chambers. The report by the ordinary managers showed that the ordinary revenue for the year amounted to £58,279 and the ordinary expenditure to £53,876, leaving a gross surplus revenue of £4403. Deducting from this £1828, the annual instalment towards liquidating the debt on the West House, a free surplus remained of £2574. Of this surplus there were derived from Craig House £2653, less a loss on intermediate and pauper patients of over £79. The cost of maintenance per head of the patients in Craig House was £124 16*s.* 8*d.*; that of intermediate patients £42 14*s.* 6½*d.*, and that of pauper patients £33 2*s.* 4*d.*, including share of instalment towards liquidation of debt. The managers see no prospect of their being able to make any abatement in the rates chargeable for the intermediate and pauper patients, so that those rates will remain at £42 for the intermediates and £33 for the paupers, including clothing for the latter. The managers renew their complaint with regard to the overcrowding occasioned by the large numbers of patients sent to the asylum by the Edinburgh parochial authorities. The report of Dr. T. S. Clouston, the physician superintendent, stated that at the beginning of the year the patients numbered 970, including six on probation, while at the end of the year there were 962 patients, also including six on probation. There had been 441 admissions during the year, 215 having been men and 226 women. The total number of patients under treatment had therefore been 1411, the largest number on record. 63 men and 60 women had died during the year. The number of rate-paid patients sent was 356, six more than the average of the past five years. There had been great difficulty in accommodating the patients sent, and it was only done by refusing almost all applications at the lower rate of board—a hardship and injustice to which he had directed attention for many years. Arrangements had been made to board other 30 patients in the Hartwood Asylum, which would give slight relief for a few months to the overcrowded wards, but it would not enable the asylum to admit the deserving poor of the private class. With regard to the causes of insanity he had to point out that alcoholic excess was the most frequent of all the contributory causes of mental disease. That cause existed in one quarter of the whole admissions. The mental causes which upset sanity and many of the bodily causes acted much more strongly in individuals of sensitive, high-strung, sympathetic temperament than on those of strong and tough disposition. There were no possessions for which an average man or woman should be so thankful as a good nervous heredity, an education in self-control, a fair self-assurance, and even a moderate thickhidedness. Between one-third and one-fourth of cases of insanity suffered from organic brain disease. One of the most terrible but medically most interesting of the organic brain diseases, general paralysis, had lately become more prevalent among city populations. Last year the asylum had to deal with 65 cases, or 69 per 1000 residents—a quite unprecedented number. The number of cases of general paralysis in the Royal Edinburgh Asylum was thrice that in the whole of the Scottish asylums. It was doubtful whether insanity in general was on the increase. The death-rate had been higher during the past year owing to the large number of general paralytics and of other cases of organic brain disease admitted. Dr. Clouston concluded by referring to the proposal to establish a mental ward in the Royal Infirmary. During the past two years over 80 patients had been discharged cured from Morningside within six weeks of admission. All those might be reckoned among the incipient cases for whose benefit such a ward was intended. If established on right lines and properly worked this scheme would be most philanthropic and useful. He considered that it would be a wise and economical proceeding on the part of the parish council to approach the Royal Infirmary managers and to arrange, if possible, to pay a yearly sum for all patients admitted to such a ward in the infirmary.

Honorary Degrees of the University of Edinburgh.

The Senatus Academicus of Edinburgh University have resolved to confer the honorary degree of Doctor of Laws at the April graduation ceremonial on the following:—The Right Hon. Herbert Henry Asquith, K.C.; Professor John Cleland, M.D., L.R.C.S. Edin., LL.D., D.Sc., F.R.S., University of Glasgow; Professor Samuel Dill, M.A., Queen's College, Belfast; Mr. Austin Dobson; Professor James Alfred Ewing, B.Sc., M.A., LL.D., F.R.S., M.I.C.E., University of Cambridge; Mr. Arthur William Rücker, M.A., D.Sc., F.R.S., Principal of the University of London; Mr. J. G. Schurman, M.A., D.Sc., President of Cornell University, U.S.A.; and Sir John Batty Tuke, M.P., M.D., F.R.C.P. Edin., F.R.S. Edin., Hon. D.Sc.

Annual Dinner of the Royal Medical Society of Edinburgh.

This dinner was held on March 4th. The guest of the evening was Dr. Patrick Manson, C.M.G. The chair was occupied by the senior president, Dr. A. M. Wood, while the other three presidents (Dr. W. E. Carnegie-Dickson, Dr. G. S. Carmichael, and Dr. J. G. McBride) acted as croupiers. There was a good attendance of members and guests.

A Grievance of the Resident Medical Officers at the Edinburgh Royal Infirmary.

For a long time past there has been great dissatisfaction among the resident medical officers of the Royal Infirmary, Edinburgh, owing to the refusal of the managers to give them free personal laundry. This at first sight may appear a small matter, but the residents claim that in an institution where no salaries are paid they should at least be maintained at the hospital expense. Inquiry has shown that free laundry is provided for residents holding similar appointments in other Scottish and English hospitals. So far as can be ascertained the Edinburgh Royal Infirmary is the only large general hospital in the United Kingdom where such a privilege is not granted or an allowance made in lieu thereof. The managers have been petitioned repeatedly by the residents on this question but the request has always been refused. Considering that the managers have recently erected a new and very commodious laundry, and seeing that the extra expense would be trifling, the residents evidently feel deeply aggrieved that the re-statement of their grievance does not seem to be taken seriously by the board.

Complete Excision of the Stomach for Cancer.

The operation of excision of the whole stomach was performed by Mr. R. H. Parry at the Victoria Hospital, Glasgow, on Feb. 14th. The case was one of extensive malignant disease and the patient has so far made a good recovery. It is believed to be the first time that the operation has been performed successfully in Scotland.

Aberdeen University.

The summary of the needs of Aberdeen University as noted in the report to the executive committee of the Carnegie

Trust by the Aberdeen University Court is of considerable length and is subdivided into seven sections. The sums suggested under this heading are exclusive of any existing endowment for the purpose named, but are inclusive of annual grants from the general grants of the University (about £940) and from public bodies (about £350). A considerable part of the grants from public bodies is likely to be withdrawn. Under Section II. (Science and Medicine), Section V. (Research and Travelling Scholarships and Fellowships), and Section VI. (Other Purposes) the following items are specified, together with their annual cost: chair in Public Health, £950 to £1000; lectureships in Astronomy, Physiological and Pathological Chemistry, Medical and Surgical Electricity, Embryology, Art and Architecture, £1200 to £1500; lectureships in Mental Diseases, Ophthalmology, and Tropical Medicine, £750; research and travelling scholarships and fellowships in science, medicine, and arts, from £1500 to £2000; library, capital sum of £2000; laboratory equipment, capital sum of £10,000; upkeep of library, from £800 to £1000; and upkeep of laboratories and museums, from £1500 to £2000.—Lord Strathcona and Mount Royal, Lord Rector of the University, is to receive the freedom of the city of Aberdeen on April 9th. On the following day the graduation ceremony falls to be held in the Mitchell Hall of Marischal College.—A meeting of the Sites and Plans Committee was held on March 7th for the purpose of considering the report which the senatus had obtained as to the accommodation required by the different professors and lecturers in their various departments in the extended buildings at Marischal College. The provision desired for the physiology department consists of a large lecture-room and seven other rooms; for the department of medicine the requirements consist of a class-room, a museum and laboratory, a retiring room, and a dark room; for pathology a plea is put in for an animal room; and for materia medica an additional research room is desired, also the enlargement of the museum, an animal observation room, a curator's room, and a storeroom. The general requirements consist of an examination room and a considerable increase of library accommodation. The matter was ultimately referred to the architect and a sub-committee, to report to what extent and at what cost it is possible to provide the desired accommodation.

Aberdeen Dispensary.

The annual meeting of the managers and subscribers of the Aberdeen Dispensary, Maternity Hospital, and Vaccine Institution, was held in the town hall on March 7th, Lord Provost Fleming presiding. The report showed that the total number of cases treated during the past year was 11,810.

March 11th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The College of Science in Dublin.

IN reply to the Member for South Belfast (Mr. W. Johnston, M.P.) the Chief Secretary said that it would be neither practicable nor desirable to remove the College of Science in Dublin to Belfast, the chief industrial centre in Ireland, as it was a national institution serving the needs of the whole country. The questions naturally arise, Why should scientific students in the north not have a college of science quite equal to that of Dublin, and why should the favours of the Crown in relation to the expenditure of public money be so largely confined to Dublin, a city with few industries and with a smaller population than Belfast, and in regard to the inhabitants of which Dr. W. K. Sullivan in his evidence before the Royal Commission on Technical Instruction, the report of which was issued in 1896, states, "The people of Dublin, who have been crying out for technical education lately, do not seem to know that they have had in their midst for the last 20 years one of the most complete polytechnic schools in Europe. If it has not done so much good as it might have done it is the fault of the people of Dublin." Under these circumstances the question is, Why should new buildings and an endowment of £8744 a year be given to Dublin and nothing to Belfast? But this is not all, for it appears that the museum in Dublin, handed over to the Agricultural and Technical Instruction Department by the Science and Art Department, South Kensington, with the College of Science, gets a yearly grant of £13,292, the Botanic Gardens receive an equal grant of £3842, while the Library receives £3732 a year. Dublin receives in connexion with the College of Science £29,680 per annum and Belfast, the great commercial centre of Ireland, not a penny. This great injustice to Ulster is felt to be a crying grievance and a campaign is being started so that the opportunities for higher scientific education shall not be confined to Dublin but shall be distributed in the provinces. What I say about Belfast applies equally to Cork. Why should those in search of higher scientific education in Cork be compelled to go to Dublin? The days of such absurd centralisation are surely now over. One of the Belfast newspapers asks "why it was that two eminent professors of the College of Science who offered to give evidence before the Royal Commission (on University Education) were not called," and hints that it was a desire to prevent disclosures about the causes of the backward condition of scientific and technical education in Ireland.

Royal College of Physicians of Ireland.

The President and Fellows of the Royal College of Physicians of Ireland, at the monthly business meeting of the College held on March 7th, elected Dr. H. C. Drury as physician to Sir Patrick Dun's Hospital, in the place of the recently elected Professor of Institutes of Medicine, who has been exempted by the College from his hospital duties. It will be remembered that Dr. J. Mallett Purser, so widely known and appreciated by graduates in medicine of the University of Dublin during the last 20 years, was not only Professor of Institutes of Medicine but was also *ex officio* a physician to Sir Patrick Dun's Hospital. His office of professor at Trinity College was filled some weeks after his retirement. The post of physician to Sir Patrick Dun's Hospital has now been filled.

The Issue of Dispensary Tickets to Farmers.

Dr. G. Evans, medical officer of the Plumbridge dispensary district, has written to the Strabane Board of Guardians stating that he had received a ticket for Poor-law medical relief for a farmer in good circumstances, with a £10 10*s.* Government valuation, and who, in his opinion, was able to pay a fee. The ticket was a 3*s.* one, and on it "5*s.*" was marked in and "3*s.*" was scored out. He thought that no guardian should tamper with tickets and he did not think that his fees should be fixed in such a way. He asked the guardians to cancel the ticket and to stop the practice. It was decided to cancel the ticket.

The Ulster Medical Society.

The fifth annual meeting of the Ulster Medical Society was held in the Pathological Laboratory of Queen's College, Belfast, on March 6th, Professor W. Whitla, the President, being in the chair. The President showed a Heart with Mitral Stenosis with the history that a child with a well-marked presystolic murmur had, after running upstairs, been seized with sudden cardiac distress and the murmur previously present had disappeared and a mitral bruit took its place. The child subsequently died and the heart showed that the stenosed valve had ruptured and there were signs of recent valvulitis. Dr. A. Dempsey read notes of (1) a case of Acute Lymphatic Leukæmia; and (2) a case of Splenic Leucocythæmia. Dr. Thomas Houston read a paper on the Blood in Cases of Glandular Tumours, Dr. C. E. Shaw gave a lantern demonstration on the Structure of the Fœtal Larynx, and Dr. J. A. Craig gave a lantern demonstration on the Mastoid Antrum. The meeting then adjourned for a fortnight, only about one half of the work on the programme having been got through.

Royal Commission on University Education in Ireland.

The Royal Commission on University Education in Ireland is to visit Belfast on April 2nd, when it is expected that there will be a great deal of evidence tendered. No subject has given rise to greater discussion than the vexed question of the settlement of university education in Ireland, and the two Blue-books already published, with evidence taken before the present commission, demonstrate the extraordinary differences of opinion which exist on the matter.

March 11th

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Tuberculosis and the Army.

AT the sitting of Feb. 21st the Chamber of Deputies adopted some modifications of the law of 1889, which modifications will tend to give the revising councils the power of eliminating from the ranks of recruits those conscripts who show any tendency to tuberculosis. The council of revision may be asked to give a certificate drawing the attention of the military surgeon to the case of any conscript who at the drawing of the lots shall have made a declaration of illness. This certificate must be signed by a medical man, by the patient, and by the mayor of the commune. The prefect or the sub-prefect will hand over to every conscript who at the drawing of lots shall make a declaration of illness a form of certificate which runs thus :—

I, the undersigned doctor of medicine of ....., certify that I have conscientiously examined number ..... in the cantonal lot-drawing of the department of ..... which deals with the recruiting of ....., and I wish particularly to draw the attention of the revising military surgeon to the condition of the recruit's ..... (here name the organ affected).

This certificate when filled up will be delivered free of charge to the prefect of the department whose duty it is to present it for revision. Any conscript who is on the indigent list can be gratuitously examined by the medical officer of the *Assistance* of the commune. After revision such certificate must be given to the recruiting commandant, who will forward it to the regiment, so that the recruit will be kept under observation from the time at which he joins the colours. Volunteers will not be enrolled unless their physical condition answers all the required tests. In some regiments where the work is very hard, such as heavy cavalry or engineers, no volunteer will be enrolled under 19 years of age. Bacteriological laboratories will be established for the complete examination of the cases of recruits rejected by the council of revision, the staff of such laboratories being composed of experts nominated by the Minister of War. Those conscripts who after examination in the bacteriological laboratories are returned as unfit for service will not be drafted to a regiment but will have to present themselves before a discharge committee, one of which will sit at every recruiting centre. Every draft of conscripts on the day of departure for the regiment will attend at the recruiting centre and will have to undergo a further examination by the military surgeons. Those who do not come up to the physical standard will at once be sent before a discharge committee and will be discharged with certificate No. 2—i.e., a certificate of temporary discharge.

Asphyxia in Nightmen.

M. Hanriot has recently been giving the Society of Biology some information upon this subject. It is well known that nightmen who have to go down into cesspools are exposed to the danger of intoxication by the gases which collect in these receptacles. Chevreuil considered that the toxic agent was sulphuretted hydrogen, but from experiments made by various observers it appears that this gas is only toxic when the proportion existing in the respired atmosphere is at least 5 per cent. M. Hanriot has analysed the air in unventilated cesspools and has found that sulphuretted hydrogen exists only in the proportion of three parts per 10,000. On the other hand, the proportion of carbonic acid was 10 per cent., of oxygen 0 to 3 per cent., of nitrogen 45 per cent., of marsh gas 28 per cent. and of free hydrogen 9 per cent. The asphyxia to which nightmen are liable cannot therefore be due to sulphuretted hydrogen. M. Brouardel and M. Loye, who conducted, as experts, an inquiry into the deaths of nightmen who had perished from asphyxia, were surprised not to find at the post-mortem examination any of the usual appearances of poisoning by sulphuretted hydrogen. It appears, then, that death is due to want of oxygen, to the high proportion of carbonic acid, and possibly to the action of toxic volatile bases. It is possible for the contents of cesspools to give off sulphuretted hydrogen and if fæcal matter is treated with acids it gives off a large quantity of sulphuretted hydrogen and of carbonic acid. But as a rule the contents of a cesspool are alkaline and contain some 2 or 3 per cent. of ammonia. Chemical disinfection is of no use ; the only means of preventing such accidents is by the use of thorough ventilation.

The Death-rate in Guiana and New Caledonia.

M. Kermorgen, Inspector-General of the Colonial Health Department, has laid before the Academy of Medicine some interesting statistics as to the death-rate in Guiana and New Caledonia. The death-rate in the latter is far lower than in the former, and the Government, no longer acting from a somewhat misplaced sense of philanthropy, has ceased to send convicts to Noumea, one of the most beautiful of French colonies, but sends them again to Cayenne. However, despite the good climate, everything is not right in New Caledonia. Tuberculosis is very prevalent and leprosy is increasing. Of the latter there were 12 cases in 1895, while in 1900 there were 83. The general mortality from May 9th, 1864, to Dec. 31st, 1895, was as follows. Of 21,630 convicts 7222 died. Of these, 5926 deaths were due to disease and 1296 to accident, a mortality of 277·6 per 1000. In Guiana the mortality from 1852 to 1895 was as follows. Of 31,903 convicts 15,189 died from disease and 789 from accident. The unhealthiness of Guiana is mainly due to malaria and yellow fever. Various works to improve the sanitary conditions have been executed and the convicts are given minute directions as to the precautions which should be taken. But the sanitarian in Guiana has a special enemy to fight against—namely, the desire of the convicts to fall ill in order that they may go to hospital. Hence they will not use mosquito nets, or drink filtered water, or take quinine. That these precautions are protective is easily seen by looking at the condition of the warders who live under the same conditions as the convicts but who do take precautions. Among these the rate of mortality is extremely low.

Lactate of Mercury in Pharmacy.

At the meeting of the Hospitals Medical Society held on Feb. 28th M. Gaucher said that he had long been on the look out for a mercurial preparation which should unite the four following advantages : (1) that of being an organic body ; (2) easy to prepare and of definite composition ; (3) of being unirritating and so capable of administration either by the mouth or by hypodermic injection ; and (4) of containing such a proportion of mercury that a dose of one centigramme per diem should be enough. M. Gaucher, together with M. Lextrait, the pharmacist at the St. Antoine Hospital, and M. Caudillon, the *interne* in pharmacy at the same hospital, think that they have found a substance possessed of these desiderata in the neutral lactate of mercury. This salt contains less mercury than the perchloride does but more than the benzoate. It is easily prepared by dissolving red oxide of mercury in a 10 per cent. solution of lactic acid. The acid must be pure. The dose is four *cuillerées à café* (from 40 to 50 minims) per diem of a 1 in 1000 solution if given in water or milk by the mouth, or one centigramme of a 1 per cent. solution given by the hypodermic method.

March 11th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Trial and Acquittal of Professor Dührssen.

THE body of one of the Berlin law courts recently presented somewhat the appearance of a medical congress owing to the number of medical men, especially gynæcologists, who were in attendance either as witnesses or spectators. The occasion was the trial of a charge made against Professor Dührssen, the well-known gynæcologist ; and the case was a remarkable one, showing as it did that a surgeon must not only justify his actions before his own conscience but may also be called upon at any moment to justify them before a court of law. A woman had been sent to Professor Dührssen's private clinic to be operated on for retroflexion of the uterus, and he had been told by the medical man who sent her that she was very desirous of becoming a mother and that both she and her husband consented to the operation being performed. Professor Dührssen asked his assistant to make a preliminary examination and to take notes of the previous history of the case ; being very much occupied he did not himself see the patient previously to operation until after the administration of chloroform. He had intended to perform vaginofixation, an operation of his own devising, in which the uterus is fixed by sutures to the vagina. In the course of the operation he found that there

were dense adhesions between the uterus and the rectum and that myomata were also present. He endeavoured to preserve the uterus, but the separation of the adhesions produced copious hæmorrhage which could not be stopped by the application of ligatures, so that he at last found it necessary to remove the whole of the uterus together with the growths. A fortnight after the operation the patient was able to return home feeling quite well. She was afterwards told what had been done and neither she nor her husband raised any objection. Six weeks later she was examined and found to be relatively well. Professor Dührssen was therefore not a little surprised when the husband brought an action against him claiming damages on the ground that the operation had been detrimental to the health of his (plaintiff's) wife, and had rendered her an invalid through the formation of a recto-vaginal fistula, so that she required nursing and special diet. This action would have been tried in a civil court, but without any obvious motive the husband withdrew it, substituting a charge of causing bodily injury by neglect (*fahrlässige Körperverletzung*). The case was accordingly taken up by the public prosecutor, and Professor Dührssen had to appear before a criminal court, where he gave an account of the circumstances, explaining that the removal of the uterus was unavoidable because the woman's life was endangered by the profuse hæmorrhage. The public prosecutor stated that before taking proceedings against the accused he had asked the opinion both of the provincial and of the central medical board (Provincial-Medicinal-Collegium and Wissenschaftliche Deputation für das Medicinalwesen) and that both of these bodies had expressed the opinion that the dangerous operation for retroflexion of the uterus was not indicated in the case of a patient who did not suffer locally and on account of her advanced age could not have been expected to become pregnant. Professor Dührssen replied that with regard to her age the woman had made a false statement to his assistant, for she had described herself as being only 40, whereas she was really 45 years of age. Moreover, in his opinion the operation was not dangerous, for it had been performed by him 70 times without a fatal result. The evidence of the assistants and nurses belonging to the clinic confirmed Professor Dührssen's statement that at the commencement of the operation he intended to preserve the uterus, but ultimately found himself unable to do so on account of the profuse hæmorrhage. The patient herself declared that she would not have given her consent if she had been previously made aware that so dangerous an operation was to be performed; she said that she had been in good health before the operation, but was now an invalid; she was told in the clinic that the operation would remove an obstacle to pregnancy and in submitting to it she had no other inducement than this; she had understated her age as being 40 instead of 45 years from a natural unwillingness to admit that at the latter age she was still desirous of becoming a mother. Witnesses called by the defence then gave evidence to the effect that the woman's health had been unsatisfactory for some years, that she had already been in other clinics on account of uterine troubles, and that she had been heard to say that she wished to be relieved from all her pains as well as from the obstacle to pregnancy. Then followed the evidence of the medical experts, of whom a great many were called both by the defence and by the prosecution, not only from Berlin but also from other cities, and even some foreigners. Professor Ruge of the provincial medical board was called by the prosecution and said that it was the opinion of the board that an operation so dangerous was not indicated in the case of a patient who suffered comparatively little and on account of her advanced age was very unlikely to become pregnant; at any rate the previous consent of the patient ought to have been obtained, and it was the duty of the surgeon to explain to her beforehand that in the course of the operation conditions might perhaps be encountered which would necessitate the removal of the uterus. Professor Fritsch of Bonn, for the defence, said that it was quite within Professor Dührssen's competence to direct his assistant to attend to matters which had to be discussed with the patient and that it was in no way obligatory on him to undertake this himself. Professor Fritsch considered that there was a collective responsibility of the surgeon and the assistant; it was allowable for a surgeon to operate on being told by his assistant that the circumstances had been duly explained to the patient and that she had given her consent; the question whether an operation was justifiable or not was a matter of conscience and of experience and could not be determined by the evidence of witnesses or by judicial methods of arriving at a decision; provided always—as he believed was the case—that the patient's consent had been given and that there was a reasonable probability of the operation being successful Professor Dührssen had acted justifiably. The public prosecutor then asked for a conviction on the charge of causing bodily injury by neglect, but in view of the good work that had been done by Professor Dührssen and the fact that his motives were quite disinterested a fine of only 300 marks (£15) was proposed. Counsel for the defence entered a plea of not guilty, explaining to the court that the patient's consent to the operation was proved by the fact that she had understated her age in order to induce Professor Dührssen to operate and that afterwards it had to be left to him to do what was necessary in order to save her life. The court, after a short deliberation, found the accused not guilty. The presiding judge stated that the patient's evidence was not reliable, that the court was persuaded that she had consented to the operation, and that Professor Dührssen could not be found guilty of neglect, as asserted by the public prosecutor, merely because the previous history of the case had been taken by his assistant and not by himself. In the opinion of the court Professor Dührssen had not failed in his duty as a conscientious surgeon. The case has naturally been much discussed by the general public as well as in medical circles. The *Berliner Klinische Wochenschrift* suggests that the shorthand-writer's notes of the proceedings and the substance of the finding of the court should be published, so that the medical profession may have an authentic report of a case of such fundamental importance, and the Berlin Medical Chamber will be asked to discuss the advisability of a reform of the criminal law in respect to medical practice, for the Dührssen case shows that in the present state of the law a surgeon has no security against malevolent prosecution.

Health of Professor Virchow.

According to current reports Professor Virchow's health is now quite satisfactory. The fracture of the femur has united and he gets up every day, but, considering his age, the probability of a resumption of his lectures is not great.

March 11th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Plague.

BUBONIC plague has broken out again in Sydney. On Jan. 15th it was reported that rats were dying in a block of houses at Rushcutter's Bay and shortly afterwards three occupants of the premises were found to be suffering from bubonic plague and were sent to the Coast Hospital. The premises were thoroughly disinfected and their contents destroyed by fire. The surrounding locality was found to be in a very insanitary condition and several houses have been destroyed. A fresh case has also occurred in Brisbane, of a virulent form. The other states remain free from plague, but rat-destroying is still vigorously prosecuted.

Infectious Diseases in Victoria.

The returns of infectious diseases for the fortnight ending Jan. 4th presented to the Board of Public Health of Victoria showed a marked increase in the number of cases of typhoid fever and diphtheria—viz., 105 cases and eight deaths had occurred during that period in the whole state from typhoid fever, as against 58 cases and two deaths for the corresponding period last year. Within the metropolitan area the numbers were 46 cases and six deaths, as against 26 cases and one death for the fortnight ended Jan. 2nd. The diphtheria returns in the whole state showed 65 cases and four deaths, as against 28 cases and two deaths in the corresponding period last year. In the metropolitan area there had been 14 cases and one death, as against 16 cases and one death last year.

Treatment of Tuberculosis in Victoria.

The local municipal council at Echuca oppose the extension of the consumptive sanatorium established in that town. The medical inspector of the Board of Health has

also reported against any extension, as the site was unsuitable. The Board has passed the following resolution :—

That the Minister be informed that, in the opinion of this board, land in two or more suitable localities in the State should be set apart for the reception and treatment of persons affected with tuberculosis, and that the land should be of such area as to afford the most ample opportunities and meet all possible requirements for exercise and recreation of all persons therein received and treated.

The Minister of Health has approved of the proposal and placed it before the Cabinet. The Board regards the treatment of consumption as a national question and considers the present sanatorium at Echuca to be unsatisfactory as to position and extent.

Infectious Diseases Hospital, Melbourne.

As has been previously stated, the Infectious Diseases Hospital, Melbourne (for which the public subscribed, as a memorial of Queen Victoria's Jubilee, the sum of £19,000), has never been completed, about £4000 more being required to make it available for patients. The Victorian Government has now decided to grant this amount, as it regards the hospital as a national institution. The committee will accordingly get the necessary work—completing the laundry, furnishing, &c.—completed as soon as possible. The difficulty of maintaining the institution, however, still remains.

Ptomaine Poisoning.

Forty people at Darlington, Sydney, have been affected with an illness resembling cholera, violent abdominal pains, retching, and diarrhœa. In some cases the whole family was affected, in others only single individuals. In every case the sufferers had partaken of corned beef purchased at the same shop, and the cases are regarded as due to ptomaine poisoning. The police seized the remaining portions of beef at the shop and had them destroyed.

Intercolonial Medical Congress.

The arrangements for the sixth session of the Intercolonial Medical Congress, to be held in Hobart on Feb. 17th, are fairly complete and the meeting promises to be very successful. Mr. G. H. Butler has been nominated as president in place of the late Dr. Bright. The attendance promises to be large and the contributions to the sections numerous. A special discussion is to be held on Cancer.

Professor of Pathology, Sydney University.

At its last monthly meeting the Senate of the Sydney University elected Dr. David Arthur Welsh, M.A., B.Sc., M.D. Edin., to the new chair of Pathology. Dr. Welsh was a distinguished student at Edinburgh University and recently pathologist to the Royal Infirmary. He has also been senior assistant to the professor of pathology and lecturer in pathological bacteriology. It is somewhat remarkable that so many of the teachers in the Sydney medical school are Edinburgh men.

The Medical Act, New South Wales.

A Bill to amend the present Medical Act of New South Wales has been drafted and read for the first time in the Legislative Assembly. If passed it would bring about the state of things existing before the present Act was passed.

Committee versus Staff of Women's Hospital.

A remarkable position has developed at the Women's Hospital, Melbourne. On Dec. 25th, 1901, a patient was admitted to the midwifery side of the hospital and developed septicæmia, from which she died on Jan. 3rd. She was isolated and the ward in which she had been was disinfected. Between Jan. 10th and 17th five midwifery patients developed high temperatures and were isolated. They did not develop any further septic symptoms and have recovered. Another patient was said to be suffering from "sapræmia." These facts were reported to the committee who appointed a subcommittee to investigate the circumstances. This was done. The resident medical staff gave it as their opinion that there was no danger of an outbreak of septicæmia in the institution, but the opinion of the honorary medical staff does not appear to have been definitely obtained. The chairman of the midwifery staff, Mr. G. Cuscaden, who reported the occurrences originally, seems to have been very undecided in his views and in some way or other caused the committee to think that there was danger and that the hospital should be closed. At all events, the sub-committee reported to the committee that no fresh cases should be admitted and that arrangements should be made to attend to patients in various nursing homes in the neighbourhood. The committee gave orders that this should be done. The resident staff thereupon refused to carry out the instructions and said that they would admit and treat cases. The superintendent and secretary also refused to carry out the instructions of the committee and lock the gates of the hospital. The committee then dismissed the superintendent and informed the resident medical officers that their services would be dispensed with at the end of a month. The honorary staff met to consider the position and reported that in their opinion there was no necessity to close the hospital. In the meantime cases had been admitted by the resident medical officers. Finally, the committee, in deference to the views of the honorary staff, decided to remove the patients from the main wards to others and thoroughly to disinfect the main wards, and when that is done to receive patients in the ordinary way. Naturally the episode has excited much interest in Melbourne and caused much correspondence in the newspapers. The whole difficulty arose from a lay committee interfering in a question which should have been decided by the medical staff.

Deniliquin Hospital.

At the annual meeting of the Deniliquin Hospital (New South Wales) it was stated by the committee that plans for a new hospital had been prepared to replace the present building erected 45 years ago. The money required had already been given by Mr. Landale.

Obituary.

Dr. Michael J. Clune died on Jan. 3rd at North Sydney at the age of 54 years. He was a native of Sydney and took his B.A. degree at Sydney University in 1863. Then he went to Dublin University where he had a brilliant career as a student. He returned to Sydney in 1872 and commenced practice in College-street. He was physician to St. Vincent's Hospital for 20 years. He was the first medical man in Australia to adopt Sayre's method of treating spinal caries. The first time small-pox occurred in Sydney Dr. Clune attended the first patient and reported its nature. He was sent with his patient to the quarantine station and on his release he advocated and secured many useful and necessary reforms in the management of the station.—Another well-known Sydney practitioner has passed away in the person of Dr. C. F. Eichler who was probably the oldest medical man in Sydney where he had practised for half a century. He came to Sydney in charge of a German immigrant ship. For many years he was honorary visiting surgeon to the Sydney Hospital. He founded the German Club in Sydney and was one of the oldest members of the Royal Society of New South Wales. He was an enthusiast in rose culture, having over 1000 varieties on his estate at Marrickville. He was a well read man and a great linguist, speaking eight languages, but always most modest and unassuming. He died on Jan. 10th at the age of 80 years.—Another very old practitioner in Victoria died recently, Dr. D. J. Williams. He was nearly 84 years old and had been long in bad health. When a young man he went to Russia and was medical officer of the Czar's yacht *Victoria*. He arrived in Melbourne in 1852 in charge of immigrants and was soon appointed medical officer at Queenscliff. He was transferred to Ballarat in 1854 as medical officer to the police and coroner, and was there during the Eureka riots. He then returned to Queenscliff, where he entered upon private practice. He was the oldest justice of the peace in the State.

Feb. 4th.

Obituary.

JOHN FRANCIS LANGAN MULLIN, M.D., M.CH. R.U.I.

"IN Dr. Mullin's death the poor have lost a good friend and Newport has lost a good citizen." With these words the coroner for Newport (Mon.) wound up the inquest on the late Dr. John Francis Langan Mullin and words more appropriate to the occasion were never uttered. The deceased gentleman was a native of Ireland, having been born in the historic town of Drogheda some 52 years ago. He was not the only member of his family who was connected with medicine, for he had two brothers in the

profession, one of whom, after an honourable record in the British navy, still occupies a high position as a practitioner in Monte Video, and the other after a distinguished career as a student in the late Queen's University in Ireland died from phthisis a few years ago in Texas. The late Dr. Mullin himself was an *alumnus* of the Queen's University, Ireland, having graduated as M.D., M Ch., and L.M. in 1880. Previously to his medical career he had sojourned for some time in the Southern States of America, and was an intimate friend of General Beauregard and other well-known Confederate leaders. Throughout his career as a student Dr. Mullin was distinguished for his remarkable assiduity and the whole-hearted zeal with which he devoted himself to the mastery of his profession. After a few years of preliminary study in Queen's College, Galway, he went to Dublin and studied medicine at the Meath Hospital under the late Dr. Foot and surgery at the Richmond Hospital under the late Sir William Stokes. By both these distinguished teachers he was held in the highest personal esteem. He graduated as M.D., M.Ch., and L.M. in 1880 and after some years' practice in Dublin finally settled down in Newport, Mon., to the career of a general practitioner. His career in Newport extended over some 10 years, and although he went there as a perfect stranger, by his genial manner and kindly disposition he soon succeeded in winning hosts of friends, and by his skill, attention, and unflagging energy he gathered together a very large practice. During his 10 years' residence in the town of his adoption he probably had not more than 10 days' holiday. This unremitting labour could have but one result, and the inevitable breakdown occurred without any premonitory symptoms when he dropped dead on Feb. 17th. The cause of death was heart failure. His funeral was probably one of the most striking spectacles that ever occurred in the annals of Newport. From his house to the cemetery, a route over a mile in length, all traffic was suspended and all that distance was completely blocked by the multitude who followed his hearse. It was quite touching to see how many were in tears and the poor especially manifested the deepest grief. But the townspeople were not satisfied with even this tribute of affection to his memory, as they started a shilling subscription to erect a memorial that would keep his name ever green amongst them.

JOHN LUMSDEN PROPERT, M.B. LOND., M.R.C.S. ENG.

We much regret to announce the death of Dr. John Lumsden Propert, which occurred on Friday, March 7th, at his house in Gloucester-place, from pneumonia after a brief illness. Dr. Propert was born 67 years ago and was the son of the founder of the Royal Medical Benevolent College at Epsom. He received his medical education at King's College Hospital, where he filled the resident appointments, and at the age of 22 years he graduated in medicine at London University, having previously taken the diploma of the Royal College of Surgeons of England. On leaving the hospital he joined his father in practice, and by his energy, ability, and assiduous attention to his patients, became a highly-successful general practitioner. His quiet, dignified manner, unfailing tact, and knowledge made his patients at once feel that they had placed themselves under a man whose opinion would not be given lightly and would be valuable when expressed.

Dr. Propert, himself a good etcher, was widely known in artistic circles as a connoisseur in many departments of art, and his house in Gloucester-place was full of beautiful specimens of china, pottery, and jewelled work. He was generally credited with being the originator of the revival of interest in miniature-painting which has lately taken place in England, and he possessed at one time a very fine collection of miniatures. At the exhibition of portrait miniatures at the Burlington Fine Arts Club he compiled the illustrated catalogue, which he afterwards enlarged into a book upon British Miniatures that is familiar to all collectors.

There was a full congregation at the funeral service, held at St. Mary's, Bryanston-square, on Tuesday last, for Dr. Propert had a large circle of private and professional friends. Among those present may be mentioned Sir Thomas Smith, Mr. Christopher Heath, Dr. T. Buzzard, Dr. G. H. Savage, Dr. Whipham, and Dr. Frederick Taylor. Many members of the council of the Royal Medical Benevolent College were also present, for although Dr. Propert had not been able to give the amount of time to the working details of the college that had been given by his father he never ceased, as a member of the council, to take an active interest in the institution, which was represented at his funeral by Dr. C. Holman (treasurer), Sir R. Douglas Powell, Dr. M. Baines, Mr Stamford Felce, Mr. Reginald Harrison, Mr. H. W. Kiallmark, Mr. C. L. Smiles, Dr. F. Taylor, Colonel Gordon Watson, Rev. T. N. Hart Smith (headmaster), and Mr. J. B. Lamb (secretary). The Rev. Russell Wakefield, rector of St. Mary's, Bryanston-square, gave a touching address on the relations of medical men to the public, and concluded by asking the prayers of the congregation for "John Propert's son, now taking up in the third generation the work of the father and grandfather."

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations and conformed to the by-laws have been admitted Members of the College and have received their diplomas:—

James Weeden Woodhams Adamson, St. George's Hospital; Frederick Eustace Anley, Charing Cross Hospital; Henry Lawrence Atkinson, Yorkshire College and General Infirmary, Leeds, and St. Mary's Hospital; Stanley Bean Atkinson, B.Sc. Lond., LL.M. and M.A. Camb., St. Bartholomew's Hospital; Austin Lewis Badcock, Charing-cross Hospital; Edward Walter Bain, London Hospital; Hugh Barber, Owens College and Royal Infirmary, Manchester, and Guy's Hospital; Wilfrid Boothby Blandy, Charing-cross Hospital; John Crosthwaite Bridge, Middlesex Hospital; Harrie Spence David Browne, B.A. Camb., Cambridge University and St. Thomas's Hospital; William Walker Browne and Joseph Barnes Burt, University College Hospital; Alexander Cameron, Middlesex Hospital; George Fernandez Mitchell Clarke, L.S.A. Lond., Charing Cross Hospital; Ernest Langsford Clay, Mason College, Queen's and General Hospitals, Birmingham; Joseph Basil Cook, Owens College and Royal Infirmary, Manchester, and St. Bartholomew's Hospital; Ernest Alfred Cox, King's College Hospital; William Thomson Crawford, University College Hospital; Richard Ingram Cuming, St. Thomas's Hospital; Henry Tregellas Doble, St. Mary's Hospital; Robert Valentine Dolbey, and Reginald Anthony Eastmond, London Hospital; Harold Augustus Easton, St. Thomas's Hospital; Charles John Ernest Edmonds, L.S.A. Lond., St. Thomas's Hospital; Frederick Kincaid Eltinger, University College, London, and Newcastle Royal Infirmary; Douglas Edward Finlay, St. Mary's Hospital; Edward Fow Fisher, London Hospital; Edward Cecil Foster, University College Hospital; George Denne Franklin, B.A. Camb., Cambridge University and St. Thomas's Hospital; John Gay French, St. Mary's Hospital; Charles Herbert Gask and Arthur William Gater, Guy's Hospital; George Frederick Gill, Otago University and St. Bartholomew's Hospital; Ian Canute Gordon Glassford, Melbourne and Edinburgh Universities; Bertram Winter Gonin, St. Mary's Hospital; Eric Walton Grogono, London Hospital; William Rhodes Harrison, St. Mary's Hospital; Percival George Harvey, St. Bartholomew's Hospital; Somerville Hastings, Middlesex Hospital; Walter Turner Haydon, St. Thomas's Hospital; Frederic Lewis Henderson, Cambridge University and Middlesex Hospital; George Sullivan Clifford Hayes and Hugh Arthur Higgens, Guy's Hospital; Walter Henry Philip Hill, M.D., C.M. McGill, McGill University, Montreal; Andrew Ferguson Horn, University College Hospital; Charles Reginald Howard, B.A. Camb., Cambridge University and Guy's Hospital; Leslie Edward Hughes, St. Bartholomew's Hospital; Edwin Hyde, Cambridge University and St. George's Hospital; Francis Willan Jackson, St. Bartholomew's Hospital; Luis Ricardo Jimenez, Guy's Hospital; Hugh Nevill Keeling, Yorkshire College and General Infirmary, Leeds, and St. Mary's Hospital; Thomas Thelwell Kelly, Alfred Dudley Eskell Kennard, and William Perceval Ker, Guy's Hospital; Horace Harvard Kiddle, St. Thomas's Hospital; Henry Ardagh Kingsmill, M.D. West Univ., Western University, Ontario, Edinburgh, and Middlesex Hospital; Frederick Samuel Langmead, St. Mary's Hospital; Albert Penard Laycock, Cambridge University and London Hospital; Alfred Newman Leathem, Charing-cross Hospital; Napoleon Leonard, St. Bartholomew's Hospital; John Woodruff Lewellyn, University College, Cardiff, and St. Bartholomew's Hospital; Archibald Malcolm Macintosh, St. Mary's Hospital; Matthew Robert Cecil MacWatters, King's College Hospital; Frank Derecourt Martyn, Westminster Hospital; Hugh Giffen McKinney, Henry Norman Marrett, Herbert Michael Henry Melhuish, and Guy Witton Miller, St. Bartholomew's Hospital; Oswald Mills, St. Thomas's Hospital; William John Morrish, St. Mary's Hospital; Cyril Raymond Moss, M.A. Oxford, Oxford University and University College and Royal Infirmary, Liverpool; Sydney Gwenffrwd Mostyn, M.A. Oxford, St. Bartholomew's Hospital; Norman Howard Mummery, University College, London; Lorimer Gifford Nash, Guy's Hospital; Harold Rundle FitzNattle, University College Hospital; Richard Arthur Needham, B.Sc., M.B., Ch.B. Vict., Owens College and Royal Infirmary, Manchester; William Nicholson, L.D.S. Eng., Owens College and Royal Infirmary, Manchester; Paul Norman Blake Odgers, B.A. Oxford, Oxford University and Guy's Hospital; John Norman Parrott, St. Mary's Hospital; Victor Stanley Partridge, L.S.A. Lond., Westminster and Charing-cross Hospitals; Nathaniel Richard Phillips, University College, Cardiff, and University College Hospital; Charles Arthur Gayer Phipps, Owens College and Royal Infirmary, Manchester, and London Hospital; James Farquharson Powell, St. George's Hospital; John Philip

Prell, London Hospital; Walton Rix Read, L.D.S. Eng., St. Bartholomew's Hospital; Morgan James Rees, Guy's Hospital; Bertram Eli Sansom, L.S.A. Lond., St. Thomas's Hospital; Leonard Douglas Saunders, St. George's Hospital; Stanley Samuel Howard Shannon, Guy's Hospital; Joseph Sharples, Cambridge University and St. Mary's Hospital; Charles Buckingham Shuttleworth, M.D., C.M. Toronto Medical College, Toronto; Edward Smallwood, L.S.A. Lond., M.D. Brux., University College and Royal Infirmary, Liverpool, and University College Hospital; George Frederick Darwall Smith, M.A., M.B. Oxon., B.Ch. Oxon., Oxford University and St. George's Hospital; Gerald Morgan Soper, St. Mary's Hospital; Richard Davis Stacey, St. Bartholomew's Hospital; William Howard Edwin Stewart, Cambridge University and St. Thomas's Hospital; Gerald William Stone, St. Bartholomew's Hospital; William Benjamin Swete-Evans, B.A. Camb., Cambridge University and St. George's Hospital; Elijah Richard Lockwood Thomas, London Hospital; Robert Edwin Goone Tilleke, M.D. Brux., L.R.C.P. & S. Edin., D.P.H. Lond., Ceylon Medical College and King's College Hospital; Francis Inman Trimmer, and John Henry Tripe, London Hospital; John Walker, St. Thomas's Hospital; Alfred Herbert Edwin Wall, Guy's Hospital; Joseph Walters, University College, Cardiff, and King's College Hospital; Herbert Kingsley Ward, Mason College, Queen's and General Hospitals, Birmingham; Vere Godsalve Ward, St. Bartholomew's Hospital; Amyas Theodore Waterhouse, B.A. Oxon., Oxford and St. Thomas's Hospital; Robert James Waugh, St. Bartholomew's Hospital; Arthur Robartes Wellington, St. Mary's Hospital; John Arthur West, St. Bartholomew's Hospital; George Harold Lawson Whale, B.A. Camb., Cambridge University and St. Bartholomew's Hospital; James Lawson Whatley, Guy's Hospital; Percy Walter White, University College, Bristol; Frederick Ernest Wilson, University College, Hospital; and Arthur Stanley Woodwark, Charles Stuart Woodwark, and Alistair Cameron Young, St. Bartholomew's Hospital.

UNIVERSITY OF CAMBRIDGE.—At a congregation on March 8th the following medical degrees were conferred:—

M.B. and B.C.—W. E. Tucker, Gonville and Caius.
M.B. only.—G. W. Deeping, Trinity.

The Balfour Studentship is awarded to Mr. J. S. Budgett of Trinity, and the Allen Scholarship to Mr. F. N. Hales of Trinity.

VACCINATION OF TRAMPS.—The Liskeard (Cornwall) Board of Guardians recently passed a resolution directing that all tramps should obtain a certificate from the medical officer of health stating that they were free from any infectious disease before they were admitted to the workhouse. The medical officer of health consequently informed the guardians that such work was outside his duties, and that his fee for each inspection would be half-a-crown. At the meeting of the guardians held on March 1st it was decided to rescind the resolution.

THE BRISTOL GENERAL HOSPITAL.—At the half-yearly meeting of the governors of this institution, held on March 10th, it was announced that the scholarships were awarded as follows: Clarke's Surgical Scholarship, £15, to Mr. A. R. Short; Sanders' Scholarships, £22 10*s.*, to Mr. J. E. Sparks; and £11 5*s.* to Mr. C. Corfield; Lady Haberfield prize, £29 9*s.* 8*d.*, between Mr. A. J. M. Wright and Mr. J. F. Blackett; Martyn Memorial Scholarship, £10 each to Mr. J. E. Sparks and Mr. C. Corfield; Henry Marshall prize, £11, Mr. A. R. Short.

DONATIONS AND BEQUESTS TO HOSPITALS.—By the will of Mr. Robert Rolle McQuater the sum of £150 has been bequeathed to each of the following institutions—the Adelaide Hospital in Dublin, Sir Patrick Dun's Hospital, and St. Mark's Ophthalmic and Aural Hospital.—The Royal London Ophthalmic Hospital, City-road, E.C., has received a donation of 30 guineas, and the North-Eastern Hospital for Children, Hackney, a donation of £10 10*s.*, from the Leathersellers' Company.—By the will of Mr. James Alexander Molleson of Edinburgh £1000 have been left to the Victoria Hospital for Consumption and a similar amount to the Children's Hospital.

PRUDENTIAL ASSURANCE COMPANY, LIMITED.—The fifty-third annual report of this company, for the year ending Dec. 31st, 1901, shows its continued prosperity. In the ordinary branch the number of policies issued during the year was 76,831, assuring the sum of £7,575,835 and producing a new annual premium income of £389,776. The premiums received during the year were £3,489,955, being an increase of £167,613 over the year 1900. The claims of the year amounted to £1,563,775. The number of deaths was 6723 and 6105 endowment assurances matured. The number of policies in force at the end of the year was 651,558. In the industrial branch the premiums received during the year were £5,529,461, being an increase of £81,764. The claims of the year amounted to £2,104,939. The number of deaths was 211,670, and 2227 endowment assurances matured. The number of free policies granted during the year to those policy-holders of five years' standing who desired to discontinue their payments was 74,798, the number in force being 771,279. The number of free policies which became claims during the year was 17,880. The total number of policies in force at the end of the year was 14,334,820; their average duration exceeded nine and a half years. The assets of the company, in both branches, as shown in the balance-sheet, were £43,292,026, being an increase of £3,396,698 over those of 1900.

THE INCORPORATED SOCIETY OF TRAINED MASSEUSES.—The members of the Incorporated Society of Trained Masseuses held their annual meeting on Feb. 14th at the Trained Nurses Club, 12, Buckingham-street, Strand. There was a good attendance. The meeting was an animated one and a very general interest was evinced in the business of the evening. The honorary secretary is Miss Grant, Trained Nurses Club, 12, Buckingham-street, Strand.

EXETER DISPENSARY.—The annual meeting of the managers of this institution was held on Feb. 22nd under the presidency of Colonel Hardinge. The medical report stated that 5638 patients had been treated during 1901 compared with 5571 in the previous year. The financial statement showed that the income amounted to £1836, the expenditure being £1918. The deficit was met by drawing on the capital of the institution, which at the end of the year amounted to £17,301.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, CITY-ROAD.—The eighty-eighth annual report of this hospital, which has just been presented to the annual court of governors, states that during the past year 709 patients have been under treatment in the wards of the hospital, and there has been an attendance of 26,884 persons in the out-patient department. The festival dinner, which was held at the Hôtel Métropole on May 6th, 1901, for the purpose of raising £10,000 to purchase a freehold site, to build and to furnish a nurses' home, and to carry on the work of the hospital, brought in receipts amounting to £5858 3*s.* 9*d.* This amount included new annual subscriptions amounting to £68 16*s.*, and was £1227 12*s.* 7*d.* in excess of the amount collected at the previous festival dinner in 1898, and is the largest amount ever collected for the charity at a festival dinner. The total income for the year amounted to £9656 15*s.* 9*d.*, as against £7365 8*s.* 5*d.* in 1900. The donations show an increase of £2543 17*s.*, but a loss of £85 in annual subscriptions is very much to be regretted. The total expenditure amounted to £10,486 3*s.* 8*d.*, and is £2784 2*s.* 8*d.* in excess of that of 1900. This increase is largely due to the payment of £2000 for the freehold site of the proposed Nurses' Home. The hospital was thoroughly cleaned and repainted throughout during the summer, and a number of much-needed repairs to the roof and gutterings were effected, necessitating an outlay of £490.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, MARCH 6TH.

Preservatives and Colouring Matters in Food.

SIR SEYMOUR KING asked the President of the Local Government Board whether he intended to take steps by the introduction of a Bill or otherwise for giving effect at an early date to the recommendations of the report of the Departmental Committee which inquired into the use of preservatives and colouring matters in the preservation and colouring of food; and whether he is aware of the opinion among the sanitary authorities in England in favour of those recommendations.—MR. GRANT LAWSON replied: The report referred to is under consideration and I cannot at present make any statement as to the course to be taken in regard to it. With respect to the last part of the question, the Local Government Board has received only one or two communications from sanitary authorities on the subject.

FRIDAY, MARCH 7TH.

Death after Vaccination.

MR. CORRIE GRANT asked the President of the Local Government Board whether he could state how far back the lymph No. 1538 used in the case of Mr. Essex, who died from blood poisoning 11 days after vaccination, could be traced, and did it begin with inoculation.—

Mr. GRANT LAWSON replied: Some lymph was obtained by the Local Government Board from Cologne in December, 1900, and it has passed through a series of five calves in succession. The resulting lymph was that used in the case of Mr. Essex. The original lymph and that derived from it have been used in the vaccination of 264 calves and no complaints have been received of ill-effects from the use of the resulting lymph in any other case, although it has been used for the vaccination of a large number of persons. I cannot give precise information as to the derivation of the particular lymph obtained from Cologne, but as a rule the stock there is renewed by inoculation of the calf with human vaccine lymph.

Increased Comforts at the Royal Victoria Hospital, Netley.

Captain NORTON asked the Secretary of State for War whether he could say what steps, if any, had been taken to increase the comfort in the wards of the Royal Victoria Hospital at Netley by the addition of chairs for invalid soldiers in Lieu of the forms heretofore in use.—Mr. BRODRICK replied that 600 Windsor chairs with cushions had been issued to Netley for use in wards, &c. Further, comfortable easy-chairs had been provided for the wards by Her Majesty the Queen out of a sum of money which she had at her disposal.

Vaccination Prosecutions.

On the motion of Mr. CHANNING a Bill was introduced to provide that no prosecution under the Vaccination Acts shall be commenced without the authority of the guardians.

MONDAY, MARCH 10TH.

Enteric Fever among the Troops in South Africa.

Sir WALTER FOSTER asked the Secretary of State for War whether he had received the report of the commission of experts appointed in August, 1900, to inquire into the causation, pathology, and modes of prevention (more particularly as affecting armies in the field) of dysentery and its connexion, if any, with enteric fever; and, if not, if he would call for the report, and lay it upon the table of the House for the use of Members.—Mr. BRODRICK: The report is now complete but has not yet been printed.—Sir WALTER FOSTER asked the Secretary of State for War whether he could state the number of cases of, and the number of deaths from, enteric fever during the months of December and January last.—Mr. BRODRICK: The approximate figures for December are: admissions, 1507; deaths, 224. The figures for January are not yet complete.

Vaccination and Small-pox in Bethnal Green.

Sir MANCHERJEE BHOWNAGGREE asked the President of the Local Government Board if he could state how many cases of small-pox had occurred or been reported from the borough of Bethnal Green since the beginning of the year; and what proportion of persons so afflicted was found to be unvaccinated.—Mr. LONG replied: I am informed that 136 persons were reported to the medical officer of health for the borough of Bethnal Green during January and February last as suffering from small-pox, but 13 of these were found not to be cases of that disease. The particulars as to vaccination are as follows:—31 were unvaccinated, of whom 12 died; four were vaccinated children under 13 years, of whom none died; 76 were persons above 13 years, who were stated to have been vaccinated in infancy, of whom seven died. The medical officer had no information as to vaccination as regards the remaining 12 cases.

TUESDAY, MARCH 11TH.

Medical Inspection for the Imperial Yeomanry.

Dr. FARQUHARSON asked the Secretary of State for War whether the enlistment of the Imperial Yeomanry was carried out by officers of the Army Medical Department or by local private practitioners necessarily unfamiliar with the details of the standard required for regulars; whether he was aware that in the printed instructions issued there was a paragraph which stated that there was no need to reject men for minor defects and deformities as the standard need not be so high as for regulars; and whether these instructions were seen and sanctioned by the Director-General of the Army Medical Department before being issued.—Mr. BRODRICK replied: In consequence of the absence of a large proportion of the officers of the Royal Army Medical Corps in South Africa the bulk of the men were examined by local practitioners. Instructions were issued that the conditions required of a recruit enlisting for the full term of service in the army might be modified. Instructions were issued to the effect that if the recruit was free from organic disease or other serious defect likely to prevent him from work during the continuance of the campaign he might be accepted. I have not been able to trace whether the late Director-General of the Army Medical Department was consulted, but the question was rather military than medical.

Medical Establishments of the Navy.

While the House was in Committee of Supply a vote of £246,500 was taken for the medical establishments of the navy. Mr. ARNOLD-FORSTER, Financial Secretary of the Admiralty, stated in the course of the debate that the principle of attaching hospital ships to the squadrons in time of peace was not to be extended, but provision was being made for rapidly equipping hospital ships in time of war. The whole fittings for several such ships had been provided and arrangements had been made for medical officers to accompany them. Medical stores had also been provided. The policy of having hospital ships had been deliberately adopted after a great deal of consideration. The medical, and, he believed, also the naval, view was that the conditions of a modern ironclad were so unfavourable to the nursing of the sick and wounded that it was most desirable to have some ship accessible in case of war to which the men might be removed as soon as possible in order that they might receive proper treatment and nursing.—Mr. WHITLEY pointed out that while there was practically no addition to the number of medical officers the salaries to be paid showed an increase in the aggregate of £4800, and he asked for an explanation.—Mr. ARNOLD-FORSTER explained that medical officers in the army were about to receive higher emoluments, and it had been thought right to offer corresponding inducements to medical men to join the service of the navy. The additions to the pay were, however, very slight.—Sir HENRY CAMPBELL-BANNERMAN said that he would like this matter further explained, because the House had been led to understand that the medical service of the navy was in a perfectly satisfactory position.—Mr. ARNOLD-FORSTER, speaking again, said that owing to the number of candidates for the army not being very large it had been found necessary to increase the emoluments of the service. In the case of the navy the number of candidates had been just sufficient but not more than sufficient. It was found, however, that when the emoluments of the officers in the army were increased there was an immediate check in the applicants for the navy, and it was decided that this could not be allowed to continue. After consultation with the War Office it was arranged that the emoluments of the navy should be the same as those of the army.

MIDWIVES BILL.

PROCEEDINGS BEFORE THE GRAND COMMITTEE.

The Grand Committee of the House of Commons on Law met on Tuesday, March 11th, with Sir JAMES FERGUSSON in the chair, and began the consideration of the Midwives Bill.

The first clause, setting out the short title of the measure, was postponed.

Clause 2 of the Bill deals with certification. In its original form it proposed in the first section that "from and after the first day of January, 1905, no woman shall be entitled to take or use the name or title of midwife (either alone or in combination with any other word or words) or any name, title, addition, or description implying that she is certified under this Act or is recognised by-law as a midwife unless she be certified under this Act."

Sir WALTER FOSTER moved to insert in this section after the first "midwife" the words "or nurse midwife." He did so, he said, in order to raise the general question of what was intended to be done by this legislation. There had been a great deal of talk about Mrs. Gamp and Mrs. Harris, but these ladies, famous in English literature, were not touched by the Bill. Now, if they wanted to do this work thoroughly they ought to include all classes of women who attended childbirth, including Mrs. Gamp and Mrs. Harris, who were the chief source of danger. Of 10 women who attended midwifery cases one was a technically qualified person and held some sort of certificate after a certain amount of training, and the other nine were really mouthly nurses and it was these nine who in the opinion of medical men were responsible for the mischief that occurred.

Mr. HEYWOOD JOHNSTONE asked the committee not to accept this amendment because the Bill proposed to deal only with midwives and not with "nurse midwives," whatever that term might mean. It might be a very desirable thing in the interests of the public health that every person who attended women in childbirth should be registered and qualified and supervised, but this could not be done at the present moment. The condition of kindred professions did not encourage such an experiment and they could only proceed by steps in a matter of this kind. They had been something like 10 years, if not more, in getting as far as they had, and he asked the committee seriously to consider this point and not to take a step which would overload the Bill and prevent its passage. The promoters had designedly made it a somewhat modest Bill because they knew that only by so doing they would have a chance of seeing the Bill passed. If they accepted this amendment it would be the first step towards destroying and wrecking the Bill.

Sir BARRINGTON SIMEON said that he would like to know whether this was a Bill to protect the title of "midwife" or a Bill to protect parturient women.

Mr. HEYWOOD JOHNSTONE said that it was a Bill to protect parturient women in the same sense that persons desiring the services of a medical man were protected by being able to distinguish between qualified and unqualified medical men.

On a division the amendment was rejected by 21 votes to 7.

Mr. PARKER SMITH moved to insert words to secure that the uncertified woman shall not use a title implying that she is "a person specially qualified to practise midwifery." These words, he said, were taken from the Dentists Act. The Bill did not propose to impose a penalty upon any woman who practised for gain, but it did propose to defend the public by letting it know that the woman who used the title "midwife" might be relied on to do her work efficiently. He considered that no woman should be entitled to call herself an "obstetric nurse" or a "nurse midwife" or anything else of that kind unless she were certified under the Act.

Mr. HEYWOOD JOHNSTONE said that his only objection to the proposed words was that he thought they would render the clause cumbrous and were unnecessary; though they appeared in the Dentists Act it was rather difficult to know what meaning they would carry. Supposing that there was a criminal prosecution it would be a very difficult thing for anyone to say that the person against whom proceedings were taken had used some name, title, or description, implying that she was a person specially qualified to practise midwifery. Members of the committee must bear in mind that they were dealing here with a penal clause and that it was desirable that the words used should be few and simple and leave as little room as possible for mistake.

Mr. AMBROSE approved the amendment as strengthening and improving the clause.

The amendment was carried by 19 votes against 12 and the words were inserted in the clause.

The committee then took up the consideration of the second section of the clause; "Any woman who, after the first day of January, 1905, not being certified under this Act, shall take or use the name of midwife, or any other such name, title, addition, or description as aforesaid, shall be liable on summary conviction to a fine not exceeding £5."

Mr. GRIFFITH-BOSCAWEN moved to insert after the first "shall" the words "habitually and for gain attend women in childbirth or shall." He understood the object of the promoters of the Bill to be to put an end to the frightful amount of preventable suffering and disease which occurred owing to the attendance of perfectly ignorant women; and in order that this terrible evil might be thoroughly dealt with it was necessary that these ignorant women should be prohibited from practice altogether. As the Bill stood there was nothing in it to prevent these ignorant women from practising or to secure their proper training. The Bill merely granted legal certificates to what he might call the better class of midwives and allowed all these ignorant, dirty, and dangerous women to continue in future as they did at the present moment. Instead of striking a blow at the people who really did harm the Bill left them alone. He thought that the committee ought to aim at making a thorough and complete measure, one that would deal with

an admitted evil. They ought to insert the provision that was in the Bill of 1900. He could not understand why it had been omitted. They were told that a certain Government office objected. He had very great belief in Government offices, but, after all, they could not be allowed to dictate the legislation of the country, and if the House of Commons thought that in order to deal thoroughly with a matter certain enactments were necessary it was for the House to pass those enactments and for the Government office to see that they were properly carried out. They had been told that this was contrary to the precedent of the Medical Act, the Dentists Act, and other Acts, but he did not think that the cases were analogous. There was an evil here which required a very stringent enactment. They had been told by Sir Michael Foster that this legal certificate would be enough in itself to prevent people from employing women who were not certified; that they would always resort to the certified woman. He could not believe this. On the contrary, he believed that poor people would continue to resort to the lower class of midwife because of the lowness of her fees.

Mr. T. P. O'CONNOR said that he thought it was a defect in the law that the public were not more protected from quacks. The law was that anyone could go and consult a quack. His first objection, therefore, was that they were introducing with regard to a class of inferior medical practitioners (if he might so describe midwives) a principle which had not yet been established in the law with regard to a large, superior, and more responsible body of practitioners—namely, physicians and surgeons. Another point was that if this Bill were passed the new class of certified midwives which it would bring into existence would not become a numerous class, for some considerable time at any rate, in the small towns and villages. If this amendment were passed it would deprive many places of all the aid to which they had been accustomed, or nearly the whole of it. Therefore he thought that the amendment was premature.

Sir JOHN BATTY TUKE said that he could not see the force of the last argument used by Mr. O'Connor, because according to the Bill any midwife of reputable character now in practice could claim to be certified during the first two years from the date of the Act coming into operation. Surely, therefore, there would be sufficient midwives to fill up any gaps created by this legislation. The penal provision was in the Bill of 1900, and he could see no good reason for its omission from the present Bill.

Mr. HEYWOOD JOHNSTONE said that the mover of the amendment knew perfectly well that the acceptance of these words meant the ruin of the Bill. He knew perfectly well that Governments, even in these days of large majorities, had some little control over the shaping of private Members' Bills. But apart from that, an objection to this amendment was that it was contrary to Parliamentary procedure and practice in all kindred matters. The Medical Act of 1858 did not make unqualified practice penal; it simply imposed a penalty upon persons who professed to be qualified when they were not qualified just in the same way as this Bill proposed to impose a penalty upon women who professed to be qualified midwives when they were not qualified. From the very passing of the Medical Act of 1858 the General Medical Council and other medical authorities had tried their best to make unqualified practice of any sort penal and he found that so lately as last month one of the leading medical papers said that the omission to penalise unqualified practice was a great defect in the Medical Acts. This, therefore, was the thin end of the wedge, and if the committee were to allow it to be inserted they would very soon find Parliament asked to amend the Medical Acts so as to render all unqualified practice penal. The amendment was not only contrary to the Medical Act, but it was also contrary to the Dentists Act, 1878, and to the Veterinary Surgeons Act, 1891. He might also say that these words which were in the Bill of two years ago raised very great doubts as to the position of the person generally known as the friendly neighbour. Two years ago the promoters of the Bill sought in every possible way to frame words which would satisfy those Members who were desirous that women helping their neighbours in this time of trouble should be protected from all danger of penalty or interference, but they could not frame any form of words which were satisfactory to those who wished to protect the interests of these women. If the words proposed in the amendment were put in they would, no doubt, interfere very seriously with the help of the friendly neighbour, for let it be remembered that in a matter of this kind poor people were easily frightened, and if they thought that there was any risk whatever they would not examine minutely the words of the Act of Parliament but would simply run off frightened. The fate of the Bill practically depended upon the fate of this amendment, and he asked the committee to reject the amendment.

Sir WALTER FOSTER said that he had long been connected with the General Medical Council, and he had never known it to take any steps to put down unqualified practice in the sense referred to by the hon. Member. All that the General Medical Council had done had been to try to protect the registered practitioner and occasionally to institute prosecutions against persons who used titles indicating that they were registered. He could not think that the analogy between the midwives proposed to be registered under this Bill and the medical profession was a correct one. The medical profession were the vast majority of the people engaged in the practice of medicine, surgery, and midwifery, but the women here were only a small section, probably about one-tenth, of those engaged in the practice of midwifery. They were taking pains to protect a certain small and limited class of certified midwives, whereas the whole class of monthly nurses who did an infinitely greater amount of harm were left outside. He submitted that in such a matter there should be a penal clause. As to what would happen in country districts, the women now engaged in practice would come in and be registered the moment that the Bill was passed and the Central Midwives Board was constituted.

Mr. SCHWANN insisted that if the proposed words were introduced they would raise a legion of opponents to the Bill.

Sir MICHAEL FOSTER said that the operation of the measure could only be a matter of opinion and in spite of the strong assertions to the contrary he still believed that its operation would eventually very largely diminish, almost to extinction, the class of women whom they all desired to be extinguished. He had practised the art of midwifery for some six years in country districts, and he believed that without calling into operation any penal clause the Bill would produce the desired result.

Sir FRANCIS POWELL said that since the second reading of the Bill he had gone into this matter very carefully and he had come to the conclusion that it would be safer on the whole to do without a penal provision.

On a division the amendment was rejected by 25 votes against eight.

Mr. AMBROSE moved to insert these words: "Or any woman who being licensed under this Act shall employ as a substitute at any childbirth any person not licensed under this Act shall be liable on summary conviction to a fine not exceeding £5; provided always that nothing in this Act shall apply to any person or persons attending a woman during labour in a case of emergency until the services of a person licensed under this Act, or of a registered medical practitioner, are available." The hon. Member denied that he had any wish to wreck the Bill; he merely wished to make it as perfect as possible.

Mr. HEYWOOD JOHNSTONE pointed out that there was already in the Bill a provision that no woman certified under the Act should employ an uncertified person as her substitute.

The amendment was negatived without a division.

Sir JOHN TUKE moved to insert a section to the effect that "no woman shall be entitled after the first day of January, 1905, to recover any fee or charge for attendance as a midwife unless she is certified under this Act." He argued that it was only a matter of justice to the certified midwife that she should have this security for her fees.

Mr. PARKER SMITH hoped that the committee would accept this section, which, he said, was thoroughly in accordance with the principles of the Medical Acts. It was one of the inducements offered to medical practitioners to get registered that registration enabled them to sue for fees in a court of law and he thought that this inducement should be offered to midwives.

Mr. HEYWOOD JOHNSTONE said that he must ask the committee to decide this question for the promoters of the Bill. There was much to be said on both sides. Personally he should feel considerable difficulty in resisting the amendment because he felt considerable sympathy with it, but on the other hand it must be borne in mind that they were disentitling a woman to recover fees for doing what was a perfectly legal act.

Mr. GRIFFITH-BOSCAWEN spoke in support of the amendment as calculated to improve the legal position of the certified midwife.

The amendment was carried by 21 against 10 votes and the words proposed by Sir John Tuke were accordingly inserted in the Bill.

Mr. T. P. O'CONNOR moved to insert these words: "No woman certified under this Act shall represent that she is to be regarded as an independent practitioner of midwifery." The main opposition of the medical profession to this Bill was that they were creating a class of midwives who would usurp, not to the disadvantage of the medical profession but to that of parturient women, the position of the obstetric physician. For himself, he regarded this as a serious danger. The midwife should be entitled to act as a midwife only in a perfectly easy, natural, normal state of things, and he did not think that too many provisions could be inserted in the Bill to enforce this upon the mind of midwives.

Mr. COHEN criticised the proposed words as ambiguous.

Mr. HEYWOOD JOHNSTONE said that he did not know what this amendment was aimed at or what it would effect.

Sir WALTER FOSTER said that the object of the amendment was to bring home to midwives that they must not regard themselves as independent practitioners of midwifery and that when anything went wrong with a case it became their duty to send for a medical practitioner. In the interests of the smooth working of the Bill he was inclined to support the amendment.

Mr. EMMOTT said that while he was in sympathy with the object of the amendment he did not think that the words proposed were of any use.

Sir WALTER FOSTER: What the medical profession means by an independent practitioner of midwifery is a person, man or woman, who is qualified to practise midwifery in all its branches.

Mr. EMMOTT: Quite so; but would the judges mean that?

Sir WALTER FOSTER: Nobody can tell what the judges will do with Acts of Parliament, but these words have been arrived at after some deliberation and I believe that they are proposed in perfectly good faith.

After some further discussion Mr. O'CONNOR withdrew the amendment.

The committee then proceeded to the consideration of Clause 3—viz.: "Any woman who, within two years from the date of this Act coming into operation, claims to be certified under this Act shall be so certified provided she holds a certificate in midwifery from the Royal College of Physicians of Ireland, or from the Obstetrical Society of London, or such other certificate as may be approved by the Central Midwives Board, or produces evidence satisfactory to the board that at the passing of this Act she has been in *bonâ-fide* practice as a midwife and that she bears a good character."

Mr. T. P. O'CONNOR took exception to the two bodies named being distinguished by this special treatment and suggested that the whole responsibility as to the acceptance of certificates should be left with the Central Midwives Board.

Sir JOHN TUKE moved to strike out of the clause the reference to the Royal College of Physicians of Ireland and the Obstetrical Society of London. He thought that not only was it invidious to make any destinctions in this connexion, but it was inferentially setting up a standard for the Central Midwives Board.

Mr. HEYWOOD JOHNSTONE gave an account of the work done by the Obstetrical Society of London and said that the question was whether in this Bill there should be some recognition of that work. The society, he said, had been doing the very work which in future would be done by the Central Midwives Board, and again and again it had been openly stated that when a duly qualified examining board had been called into existence by Parliament, as he hoped one would be by this Bill, the functions of the society as far as the examination of midwives was concerned would cease. At the present moment there were 6527 women on the register of the society, who, he thought, would make an admirable nucleus for the new system. In these circumstances he asked the committee to recognise the society in the manner proposed.

Sir WALTER FOSTER said that it was the first time that he had known of an Act of Parliament being used to give a testimonial to a private society. He objected to the Obstetrical Society of London being given special advantages over other societies engaged in the same work. All these 6527 women would come upon the register by virtue of the decision of the Central Midwives Board and therefore they would suffer no detriment.

Mr. SCHWANN took the view that it would be doing the Obstetrical Society of London an injustice if it were not recognised in the manner proposed in the Bill and asserted that the tests applied by the society to its candidates were often more severe than those applied to medical men in connexion with this particular work.

Mr. GRIFFITH-BOSCAWEN said that the whole object of this legislation seemed to be to glorify this society. He admitted that it had done good work, but here they were setting up a new board and the first thing they proposed to do was to tie its hands by saying that it must accept the certificates of this particular society.

Sir BARRINGTON SIMEON thought that the better course would be to make no distinctions of any kind, but to leave the matter with the Central Midwives Board.

Mr. AMBROSE took the view that if any institutions were to be mentioned they should all be mentioned.

Sir MICHAEL FOSTER pointed out that this arrangement would only last for two years and that thereafter the Central Midwives Board would be free to establish its own standard.

Sir WALTER FOSTER said that the first two years were all important, because they would give the character to the whole subsequent proceedings.

Mr. JOHN DILLON spoke of the clause as a pure advertisement of the Obstetrical Society of London.

On a division the amendment moved by Sir JOHN TUKE was rejected by 18 votes against nine.

Sir JOHN TUKE then moved to extend the special recognition to the following institutions—viz., the Queen Charlotte Hospital, London, the Maternity Hospitals of Manchester, Birmingham, Liverpool, Edinburgh, and Glasgow, and the Rotunda and Coombe Hospitals, Dublin.

Sir WALTER FOSTER, in supporting this amendment, said that nothing did more to lower the medical profession than the two years of grace allowed after the passing of the Medical Act of 1858. Shiploads of gentlemen went from London and other places up to certain universities in the north and came back full-blown doctors of medicine and there were hundreds put upon the Medical Register in that way.

Sir JOHN TUKE said that he must put in an absolute denial to that statement.

Sir WALTER FOSTER said that his hon. friend represented one of these universities and was bound to stand up for it, but the fact remained.

Sir JOHN TUKE insisted that the statement was absolutely unfounded.

Sir WALTER FOSTER said that he knew what he was talking about. He was invited himself to go to one or two of these places. The doors of these institutions were opened and a large amount of money went into their coffers. In the present case he would wish to have no names inserted in the Bill at all.

Sir JOHN TUKE said that he must be allowed to say that as regards the universities of Scotland the statement of his hon. friend was entirely and absolutely without foundation.

The amendment was rejected by 17 votes against eight.

The committee then adjourned until Friday, March 14th.

ROYAL COMMISSION ON ARSENICAL POISONING.

A MEETING of this Commission, for the examination of witnesses, was held on March 7th, in the Westminster Palace Hotel, Lord KELVIN, chairman of the Commission, presiding.

Dr. ERNEST S. REYNOLDS (Manchester) who gave evidence last year, presented himself for further examination. In reply to the Chairman he said that a special look-out had been kept by himself and his assistants at the Manchester Workhouse Infirmary, the Manchester Royal Infirmary, and in his private practice for any symptoms which might have been caused by arsenic occurring in food or drink. They found that the symptoms had practically all disappeared. The keratosis, the arsenical neuritis, and the pigmentation had quite disappeared and the cases of herpes had very much diminished. Even the pigmentation which had been ascribed for years to the irritation of vermin in the pauper class had very markedly lessened in frequency. Up to the end of September, 1901, a few cases showing arsenical symptoms presented themselves at Crumpsall, but in all cases except two it was found that they had suffered already during the winter 1900–1901 and had not entirely recovered. The two exceptions were women who said that they had only recently—about May—become affected. In each of these cases Dr. J. Dixon Mann found that the hair contained a considerable quantity of arsenic. The beer which one of the women had consumed was found to contain one-hundredth of a grain of arsenic per gallon of beer. He could not give the actual amount of arsenic found in the hair. He had, however, the analyses of some hair which Mr. Scudder, the chemist in Manchester, had given him, which showed minute traces of arsenic, something like 0·003 per cent.; this was in the hair of a healthy person who was not known to have taken arsenic in any way. The idea that Gautier wished to make out was that arsenic was an essential ingredient in the thyroid gland, but knowing what they did now about the prevalence of arsenic in all sorts of things he (Dr. Reynolds) thought that it was quite likely that it was introduced from an outside source. Dr. Reynolds did not think that arsenic was an essential ingredient of hair, because in analysis they had had many blank results. At Crumpsall, from Nov. 30th, 1900, to July 20th, 1901, they had had 30 deaths—17 women and 13 men. Of these 10 men and four women were found to be suffering from rapid consumption. These figures did not include the cases of patients who had died before the cause of the outbreak was known.

By Sir WILLIAM CHURCH: Since 1901 his experience in Manchester of neuritis and other conditions attributed to arsenic had approximated to the experiences of the other large towns in this country. During the last nine months, in hospital and in private practice, he had seen a considerable number of very heavy drinkers, but only two cases of peripheral neuritis. These cases were in private practice and the symptoms were those of neuritis. One case was that of a cab-driver who drank at least a bottle of whisky a day and the other was that of a woman who did the same. In the case of the cab-driver there were pains in the limbs and some loss of power, but there was no wasting and there were no other signs at all of any arsenical poisoning and he did not think that the man took beer. The woman was bed-ridden and certainly took no beer. The symptoms were coming on rather fast. There was some wasting, there was distinct loss of power, and there were marked pains in the limbs; but again there was not a single sign of any other arsenical symptom. These were the only two cases which he had been able to pick out in which beer-drinking could be excluded and in which there were signs of peripheral neuritis. In beer-drinkers pure and simple there was now no peripheral neuritis in Manchester. It was extremely probable that arsenic might remain locked up in the thyroid gland for a long time. He knew that Dr. Dixon Mann had been examining thyroid gland and that he had not found arsenic in it, and he (Dr. Reynolds) thought that the experiments of Gautier should be taken with some reserve.

By Dr. WHITELEGGE: He thought that a great deal of the pigmentation which was thought to be due to vermin was actually due to arsenic. He would expect to find pigmentation from arsenic alone and he did not think that alcohol added to the tendency.

By Sir WILLIAM CHURCH: If he found arsenic either in the hair or the urine he should look for an arsenical causation.

By the CHAIRMAN: Very many of the arsenical patients who had died had died from phthisis, and in most of the cases of cirrhosis of the liver with ascites post-mortem examination had shown that there was also tuberculous peritonitis. There were still two or three old arsenical cases suffering from paralysis at the workhouse infirmary; they were recovering very slowly. During the last seven months he had been watching most carefully for cases of so-called true "alcoholic" neuritis occurring in pure spirit-drinkers, and although there had been but little or any decrease in alcoholic consumption in the district during this period and he had seen very many heavy drinkers, yet alcoholic neuritis (whether in spirit-, beer-, or mixed-drinkers) seemed to have disappeared from the district, which was formerly noted for the prevalence of the condition. These observations were confirmed by his colleagues and professional friends. Curiously enough, there had been also an enormous decrease, almost to *nil*, of cases of so-called "alcoholic" cardiac muscular dilatation, with a disappearance of the marked œdema of the legs seen in the arsenical cases. From his clinical observations during the last 20 years he was driven to the conclusion that the disappearance during the last seven months of so many symptoms which were formerly described as being due to alcohol could only be explained by the elimination of arsenic from alcoholic beverages, and as a corollary that arsenic had been present in alcoholic beverages (*to an extent dangerous to a few drinkers specially susceptible*) for many years and possibly from a source entirely independent of contaminated glucose. In September, 1901, Major Ronald Ross asked him to see a case of supposed beri-beri. The patient, who had been brought from the West Coast of Africa, was an American lady, the wife of a missionary, and she was a total abstainer. She had well-marked neuritis exactly similar to that occurring in arsenical poisoning; there was a history of a "rash" and there was very slight punctiform pigmentation. She had been living principally on tinned Californian fruit. Her hair was examined by Dr. Dixon Mann who reported to him that it contained "not a mere trace but considerable quantities of arsenic." The Californian fruit had been examined by Mr. Scudder and had been found to be practically free from arsenic and therefore it could be set aside so far as Mr. Scudder's examination was concerned. He would suggest that these tinned foods should be further examined for the presence of arsenic. The idea that arsenic might be the cause of some cases of so-called beri-beri, as suggested by Major Ross and himself some time ago, was now gaining ground in the tropics and evidence was forthcoming to show how easily arsenical poisoning might occur in tropical districts. Dr. Dixon Mann had examined specimens of hair in 24 cases of patients who were suffering from beri-beri which had been sent to him from various parts of the world; 18 of these specimens were found to be free from arsenic and six of them to contain the drug, but he (Dr. Reynolds) did not know in what quantity. Dr. Reynolds had recently received samples of the hair of four beri-beri patients in the hospital ship at Cardiff who had come from Rangoon. These he sent to Dr. Dixon Mann who found that two of them yielded no arsenic, one an appreciable amount of arsenic, and one a trace of arsenic. Although he did not think that the arsenical origin of beri-beri was proved, still the matter was worthy of further consideration, especially when the dreadful character of the disease and its great prevalence were thought of. The lady whose case he had mentioned said that she had not used any arsenical hair-wash and that so far as she knew she had not taken any drug containing arsenic. After consulting with Dr. Dixon Mann he was of opinion that the *absence* of arsenic in the hair in a suspected case of arsenical poisoning did not prove that the case was not arsenical. The test for arsenic in hair required the greatest skill and experience for its performance, and results given must be examined critically unless the analyst was of high-standing and well-known ability. Some little time ago, at the request of Dr. Hodgson, he visited St. Luke's Hospital, Halifax. He saw there four suspected cases of arsenical poisoning. One case, that of a man, seemed somewhat doubtful clinically, but in this case Dr. Hodgson chemically proved the presence of arsenic in the body. The other three cases, two men and a woman, were very well-marked cases of arsenical poisoning, the clinical appearances being severe and most typical. Moreover, in his opinion, they had been poisoned with arsenic probably within three months of his visit. If he were asked to explain this outbreak at Halifax he should say that the beer and the malt ought to be examined.

The other witnesses examined were Mr. ARTHUR ANGELL, public analyst, Southampton, and his son, Mr. ARTHUR FRENCH ANGELL, who gave evidence as to a series of experiments carried out by them to determine whether or not plants were capable of taking up arsenic from soils manured with arsenical phosphates. They explained that in speaking of arsenic they meant arsenious oxide, the white arsenic of commerce. Several samples of the ordinary superphosphate manures of commerce were obtained from three large manufacturers and were tested for arsenic. Arsenic was found in every instance—22 in all. The quantity found was generally about 0·03 per cent. by weight on the whole manure. An ordinary superphosphate of lime was mixed with ½ per cent. of arsenic, this being a proportion of arsenic about 17 times greater than the quantity usually present in commercial phosphates

Half the manure was applied at the time of sowing and half when the young plants were well above ground, care being taken on each application to avoid actual contact between the manure and seed or plant. It was determined by experiment that the arsenic when mixed with superphosphate was readily soluble in cold water. The method adopted for the testing for, and estimation of, arsenic was Hebner's modification of Marsh's process. The results of their experiments, which had been carried as far as one season permitted, went to show that the roots of plants were capable of taking up arsenic from soils manured with arsenicated phosphates. From the roots the arsenic could rise in the fibro-vascular bundles by a process of suction and capillarity, and might be present in measurable quantities in the early stages of succulent growths. Arsenic was found in rhubarb petioles and leaf blades, and in the young leaves or grass of rye and buckwheat, and in the stems and leaves and green pods of broad beans. In no instance was the faintest trace of arsenic present in the fruit or seed of any plant. It thus appeared that in those parts of the plants which were remote from the influences of mere mechanical forces, and where vital or physiological energies predominated, a selective power was brought to bear, and arsenic, even if present, was rejected. No arsenic was present in the green, unripe, nor in the fully-ripe seeds of buckwheat, barley, wheat, oats, maize, rye, nor in the fruits of tomatoes and cucumbers, nor in the whole plants of lettuce and cabbage, nor in carrots and mangold. They had satisfied themselves that the culture of all the plants was carried on with due care to prevent the adherence of the arsenicated phosphate to any part of the plants above ground.

BOOKS, ETC., RECEIVED.

ASSOCIATION OF AMERICAN PHYSICIANS, Philadelphia.

Transactions of the Association of American Physicians. Sixteenth Session. Held at Washington, D.C., April 30th and May 1st and 2nd, 1901. Vol. xvi. Price not stated.

BALE, JOHN, SONS, AND DANIELSSON, LIMITED, 83-89, Great Titchfield-street, W.

The British Sanatoria Annual, 1902. With numerous Illustrations and Appendix. Price 2*s.* 6*d.*; post free, 2*s.* 9*d.*

A Handbook of the Gnats or Mosquitoes, giving the Anatomy and Life History of the Culicidæ. By Lieutenant-Colonel Geo. M. Giles, I.M.S. (retired), M.B. Lond., F.R.C.S. Second edition, rewritten and enlarged. Price 21*s.* net.; post free abroad 22*s.* 6*d*

BRITISH INDIA PRINTING WORKS, Bombay.

Report on Leprosy and the Homeless Leper Asylum, Matunga, Bombay, 1890-97. By N. H. Choksy, M.D. (*honoris causâ*), Freiburg-i.-B., Special Assistant Health Officer in Charge, Arthur-road Hospital; late Medical Officer in Charge, Homeless Leper Asylum, Matunga, Bombay. Price not stated.

CHURCHILL, J. & A., 7, Great Marlborough-street, W.

A Short History of the Society of Apothecaries of London. By Percy G. Lodge, F.R.C.S., L.R.C.S., L.A.H.I., L.S.A. Lond. With an Account of the Apothecaries' Hall of Ireland. Price not stated.

Guy's Hospital Reports. Edited by J. H. Bryant, M.D., and F. J. Stewart, M.S. Vol. lvi., being Vol. xii. of the Third Series. Price 6*s.*; to non-subscribers 10*s.* 6*d.*

CLARK, T. AND T., 38, George-street, Edinburgh.

Demonic Possession in the New Testament: Its Relations Historical, Medical and Theological. By William Menzies Alexander, M.A., B.Sc., B.D., C.M., M.D. Price 5*s.*

GRIFFIN, CHARLES, AND COMPANY, LIMITED, Exeter-street, Strand, W.C.

Forensic Medicine and Toxicology. By J. Dixon Mann, M.D., F.R.C.P., Professor of Forensic Medicine and Toxicology in Owens College, Manchester, &c. Third edition, revised and enlarged. Price 21*s.*

HIRSCHWALD. AUGUST, Under den Linden 68, Berlin, N.W.

Bibliothek von Coler (Herausgeber, O. Schjerning):—
Band XI. Die experimentelle Diagnostik, Serumtherapie und Prophylaxe der Infectionskrankheiten. Von Stabsarzt Dr. E. Marx. Price not stated.
Band XII. Die Verletzungen und Verengerungen der Harnröhre und ihre Behandlung. Bearbeitet von Dr. M. Martens, Stabsarzt an der Kaiser Wilhelms-Akademie für das militärärztliche Bildungswesen, &c. Mit einem Vorwort von Geh. Med. Rath Prof. Dr. König, Generalarzt à la suite des Sanitäts-Corps. Price not stated.

"KNOWLEDGE" Office, 326, High Holborn, W.C.

Bird Hunting on the White Nile: a Naturalist's Experiences in the Soudan. By Harry F. Witherby, F.Z.S., Member of the British Ornithological Union. Price 2*s.* 6*d.*

LIPPINCOTT, J. B., COMPANY, 36, Southampton-street, W.C.

Photographic Atlas of the Diseases of the Skin. By George Henry Fox, A.M., M.D. Parts XIII., XIV., XV., XVI. (conclusion). Price not stated.

LONGMANS, GREEN AND CO., 39, Paternoster-row, E.C.

The Foraminifera: An Introduction to the Study of the Protozoa. By Frederick Chapman, A.L.S., F.R.M.S., formerly Assistant in the Geological Laboratory of the Royal College of Science, London; Palæontologist to the National Museum, Melbourne. Price 9*s.* net.

LONGMANS, GREEN AND CO., 39, Paternoster-row, E.C., AND CHARITY ORGANISATION SOCIETY, 15, Buckingham-street, Adelphi, W.C.

The Annual Charities Register and Digest, 1902. With an introduction by C. S. Loch, Secretary to the Council of the Charity Organisation Society, London. Price 4*s.* net.

MARLBOROUGH, E., AND CO., 51, Old Bailey, E.C.

Hindústání Self-taught. With English Phonetic Pronunciation. By C. A. Thimm, F.R.C.S. Price 2*s.*; cloth 2*s.* 6*d.*

MEDICAL SUPPLY ASSOCIATION, 12, Teviot-place, Edinburgh.

Tables of Organic Materia Medica. For Medical Students. By William Wood, M.B., C.M., M.R.C.P. Eng. Price not stated.

OLIPHANT, ANDERSON, AND FERRIER, Edinburgh and London.

The Academic Gregories. By Agnes Grainger Stewart ("Famous Scots" Series). Price 1*s.* 6*d.* net.

SAUNDERS, W. B., AND CO., London and Philadelphia.

A Text-book of Physiology. Edited by William H. Howell, Ph.D., M.D., Professor of Physiology in Johns Hopkins University, Baltimore, Md. Second edition, revised. Vol. ii. Price 15*s.* net.

SCIENTIFIC PRESS, LIMITED, 28 and 29, Southampton-street, Strand, W.C.

Burdett's Hospitals and Charities, 1902. By Sir Henry Burdett K.C.B. Price 5*s.*

SHARLAND, R. L., 38, Churchfield-road, Acton, W.

The Scientific Roll and Magazine of Systematized Notes. Conducted by Alexander Ramsay. Bacteria. Vol. i., No. 4. February, 1902. Price 1*s.*

STOCK, ELLIOT, 62, Paternoster-row, E.C.

Woman's Best Work and Latent Capabilities. By Frederick James Gant, F.R.C.S., Consulting Surgeon to the Royal Free Hospital, &c. A new edition. Price 2*s.* 6*d.*

SWAN SONNENSCHEIN AND CO., LIMITED, London.

A Text-book of Insanity. By Charles Mercier, M.B., M.R.C.P., F.R.C.S., Lecturer on Insanity at the Westminster Hospital Medical School and at the London Medical School for Women. Price 6*s.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ACLAND, H. T. D., F.R.C.S. Eng., has been appointed Medical Officer to St. Thomas's Home, St. Thomas's Hospital, vice H. C. Jonas, M.B., B.S. Lond.

BEEGHING, D. H., B.A. Syd. Univ., M.B., C.M. Edin., has been appointed Medical Officer to the Post-office at Huddersfield.

BRISCOE, WILLIAM THOMAS, A.B., M.D., M.Ch. Dubl., has been re-appointed Medical Officer of Health for Chipponham.

BROWNE, H. S. D., B.A. Cantab., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Ear Department of St. Thomas's Hospital.

CHILD, F. J., M.A., M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

CLARKSON, F., M.B., B.S. Durh., has been appointed Junior Ophthalmic House Surgeon to St. Thomas's Hospital.

COATES, J., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

CROMPTON, K. E., B.A., M.B., B.C. Cantab., has been appointed Assistant House Physician to St. Thomas's Hospital.

DAKEYNE, T. E., M.R.C.S., L.R.C.P. Edin., has been re-appointed Medical Officer of Health for the Rural District of Leek.

DICK, GEORGE, M.B., Ch.B. Edin., has been appointed Medical Officer of Health for Caithness-shire, Royal Burgh of Wick, and Thurso Burgh.

DOWNES, T. W. H., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

DUDGEON, L. S., M.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Electrical Department at St. Thomas's Hospital.

EASTON, H. A., L.R.C.P. Lond., M.R.C.S., has been appointed Clinical Assistant in the Skin Department at St. Thomas's Hospital.

FRANEY, A. B., L.R.C.P. Edin., L.R.C.S. Edin., has been re-appointed Medical Officer of Health to the Hadleigh Urban District Council.

GLANVILLE, W. M. G., M.A., M.B. B.Ch. Oxon., has been appointed House Physician to St. Thomas's Hospital.

GRANGER-EVANS, JESSIE D., M.B., Ch.B. Glasg., has been appointed Clinical Assistant, New Hospital for Women.

HARCOURT, J. C., M.B. Lond., has been appointed Medical Officer to the Derwent Valley Water Board.

HENDERSON, T. B., M.A., M.B., B.Ch. Oxon., has been appointed House Physician to St. Thomas's Hospital.

HILL, W., B.A. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

HODSON, V. S., B.A., M.B., B.Ch. Oxon., has been appointed Senior Obstetric Physician to St. Thomas's Hospital.

HUDSON, A. C., M.A., M.B., B.C. Cantab., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

JONES, B.S., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

MARTIN, JOHN MIDDLETON, B.A., M.B., B.C., D.P.H. Cantab., has been appointed Medical Officer of Health for the Stroud Urban District Council, vice T. Partridge, M.R.C.P. Irel., M.R.C.S., L.S.A., resigned.

MCNAUGHTON, J. G., M.D., M.R.C.P. Edin., has been appointed Honorary Medical Officer, Choriton-upon-Medlock Dispensary, Manchester.

MENNELL, Z., M.B. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Clinical Assistant in the Throat Department at St. Thomas's Hospital.

MILLER, T. D., L.R.C.P. Lond., M.R.C.S., has been appointed Junior Obstetric Physician to St. Thomas's Hospital.

MORISON, R., M.B., Ch.B., has been appointed Junior House Surgeon to the Birkenhead Borough Hospital.

PATERSON, T. W. S., M.A., M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed House Physician to St. Thomas's Hospital.

SANSOM, B. E., L.R.C.P. Lond., M.R.C.S., L.S.A., has been appointed Clinical Assistant in the Throat Department at St. Thomas's Hospital.

SHIPMAN, G. A. C., M.A., M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

SINCLAIR, H. W., M.B., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant House Physician to St. Thomas's Hospital.

SKERRETT, P. B., B.Sc Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Senior Ophthalmic House Surgeon to St. Thomas's Hospital.

SPURRIER, H., B.A. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

STANNUS, H. S., L.R.C.P. Lond., M.R.C.S., has been appointed House Physician to St. Thomas's Hospital.

THRESH, J. C., M.D. Vict. Univ., has been appointed by the Kelso Town Council to report on the various schemes of water-supply proposed for the Infectious Diseases Hospital of the Kelso District Committee.

WHITE, G. F., M.D., has been appointed Senior House Surgeon to the Birkenhead Borough Hospital.

WRIGHTSON, R. B., M.D. Dubl., has been re-appointed Medical Officer of Health to the Aldeburgh Corporation.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND SKIN AND URINARY HOSPITAL.—Assistant Surgeon.

BOROUGH HOSPITAL, Bootle, Liverpool.—Junior Resident. Salary £80, with board and laundry.

BRADFORD POOR-LAW UNION, HOSPITAL, AND WORKHOUSE.—First Resident Assistant Medical Officer, unmarried. Salary £125, with rations, apartments, and washing.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRECON INFIRMARY.—Resident House Surgeon, unmarried. Salary £120 per annum, with apartments, board, attendance, fire, and gas.

BRENTFORD UNION INFIRMARY AND WORKHOUSE.—Assistant Medical Superintendent, unmarried. The person appointed will be required to devote his whole time to the service of the guardians. Salary £120 per annum, with apartments, rations, washing, &c.

BRIDGWATER INFIRMARY.—House Surgeon. Salary £80 a year, with board and residence.

BRIGHTON, HOVE, AND SUSSEX THROAT AND EAR HOSPITAL, Church-street, Brighton.—House Surgeon for six months, renewable. Salary at rate of £75 per annum.

BRIGHTON AND HOVE LYING-IN INSTITUTION AND HOSPITAL FOR WOMEN.—House Surgeon, unmarried. Salary £80 per annum, with apartments, board, gas, coals, and attendance.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Pathologist.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £120, with board, apartments, and laundress.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer. Salary £120, rising to £150, with board, apartments, &c.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—House Surgeon for six months. Board, residence, &c., and honorarium of £25.

EAST SUSSEX COUNTY ASYLUM, Hayward's Heath.—Second Assistant Medical Officer and Pathologist, unmarried. Salary £175 per annum, with board, lodging, washing, and attendance.

ESSEX AND COLCHESTER GENERAL HOSPITAL.—House Surgeon. Salary £100 a year, with board, washing, and residence.

GLASGOW EYE INFIRMARY.—Resident Assistant House Surgeon. Salary £75, with apartments and board.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Junior House Physician for six months. Salary at rate of £30 per annum, with board, lodging, and washing.

GREY'S HOSPITAL, Pietermaritzburg, Natal, South Africa.—Resident Medical Superintendent. Salary, £350 first year, £400 second year, with board, lodging, and washing.

GUY'S HOSPITAL.—Demonstrator of Bacteriology and Bacteriologist. Salary about £180, rising to £200 per annum.

HANLEY, STOKE, AND FENTON JOINT HOSPITAL BOARD.—Lady Resident Assistant Medical Officer. Salary £60 per annum, with board, residence, and washing.

HUDDERSFIELD INFIRMARY.—Assistant House Surgeon. Salary £60 per annum, with board, residence, and washing.

LANCASHIRE COUNTY ASYLUM, Winwick, Warrington.—Assistant Medical Officer, unmarried. Salary £150 per annum, rising to £200, with apartments, board, attendance, and washing.

LEICESTER INFIRMARY.—Honorary Assistant Physician.

LIVERPOOL STANLEY HOSPITAL.—Second and Third House Surgeons. Salaries £80 and £70 per annum respectively, with board, residence, and washing.

LONDON COUNTY ASYLUM, Bexley, Kent.—Junior Assistant Medical Officer. Salary £150 per annum, with board, apartments, and washing.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton-street, Tottenham-court-road, W.—Clinical Assistants.

MIDDLESEX COUNTY ASYLUM, Upper Tooting, London, S.W.—Assistant Medical Officer.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160 for first year and £180 afterwards.

NORFOLK AND NORWICH HOSPITAL.—House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

NOTTINGHAM CHILDREN'S HOSPITAL, Forest House.—House Surgeon, unmarried. Salary £100, with board and residence.

ROYAL BERKSHIRE HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing. Also Assistant House Surgeon. Salary £50 per annum, with board, lodging, and washing. Both for six months.

ROYAL HALIFAX INFIRMARY.—Second House Surgeon. Also Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

ROYAL SEA BATHING HOSPITAL.—Resident Surgeon as Junior for six months and as Senior for a like period. Salary at rate of £80 and £120 per annum respectively, with board and residence.

SHEFFIELD UNIVERSITY COLLEGE.—Demonstrator in the Bacteriological Laboratory. Salary £150, rising to £200 per annum.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £80 per annum, with board, washing, and residence.

ST. PANCRAS WORKHOUSE, London.—Senior Assistant Medical Officer. Salary £135 per annum, with residential allowances.

TAUNTON AND SOMERSET HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, lodging, and laundry.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, apartments, gas, firing, and attendance.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W.—House Physician for six months. Honorarium of £25, with board and lodging.

WEST RIDING ASYLUM, Wadsley, near Sheffield.—Fifth Assistant Medical Officer. Salary £140 per annum, rising to £160, with board, &c.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeon, under the Factory Acts, at Kendal, in the county of Westmorland; at Castle Bytham, in the county of Lincoln; at Earl's Colne, in the county of Essex; at Draperstown, in the county of Londonderry; at Colnbrook, in the county of Buckingham; at Ripley, in the county of Derby; at Mortimer, in the county of Berks; at Tullow, in the county of Carlow; at Tow Law and Wolsingham, in the county of Durham; at Chesterfield, in the county of Derby; and at Mountmellick, in Queen's County.

Births, Marriages, and Deaths.

BIRTHS.

FARTHING.—On March 4th, at Dartford, the wife of T. Farthing, M.B. Edin., of a son.

FERGUSON.—On March 5th, at Canfield-gardens, South Hampstead, the wife of Arnold Ferguson, F.R.C.S. Edin., of a daughter.

GEDGE.—On March 4th, at Pewsey, Wilts, the wife of Arthur Sydney Gedge, M.R.C.S., L.R.C.P. Lond., of a daughter.

THOMSON.—On the 10th inst., at Bridge House, Retford, Notts, the wife of Dr. George Thomson, of a son.

TYSON.—On March 3rd, at Folkestone, the wife of W. J. Tyson, M.D. Durh., F.R.C.P. Lond., F.R.C.S. Eng., of a daughter.

YOUNG.—On March 3rd, at Sydney, N.S.W., the wife of H. Taylor Young, M.D. Glasg., of a son.

MARRIAGE.

LONGHURST—PHILLIPSON.—On March 8th, at St. Alban's Church, Teddington, Percy A. Longhurst, M.R.C.S., L.R.C.P. Lond., to Naida Eveleigh Phillipson, eldest daughter of the late N. E. Phillipson.

DEATHS.

DUDLEY.—On March 7th, William Lewis Dudley, M.D. St. And., F.R.C.S. Eng., in his 82nd year.

NIGHTINGALL.—On Feb. 26th, at 83, London-road, St. Leonards-on-Sea, Robert Salisbury Nightingall, M.D. St. Andrews, M.R.C.S. Eng., L.S.A., in his 86th year. Interred at Hollington.

SEDGEFIELD.—On Feb. 8th, at Sanawar, Punjab, India, Lieutenant-Colonel Arthur Robert Wyatt Sedgefield, I.M.S., aged 47 years.

TURNBULL.—On March 7th, at Cleveland-gardens, Surgeon-Major Francis Turnbull, I.M.S. (retired), aged 82.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

PUBLIC VACCINATORS AND GUARDIANS OF THE POOR.

IN THE LANCET of March 1st, p. 639, we described the controversy which has been going on between the guardians of the poor for the Holbeach district of Lincolnshire and the public vaccinators for the same district. Certain members of the board were desirous that the present contracts with the public vaccinators should be terminated at the end of 28 days and accordingly a motion to this effect was brought up at the meeting of the guardians held on March 6th. The motion, however, was lost by nine votes to six. In the course of the discussion Mr. Dring made the very true remark that "no professional men work harder than medical men and none are worse paid." The main point at issue which determined the moving of the proposal to terminate the contracts was that many persons preferred being vaccinated at their own homes to calling at the surgery of the public vaccinator, this entailing a higher fee. This is only natural, and it is also only fair that if a public vaccinator has to make a journey to a patient's house he should then be paid at a higher rate than if the patient went to him. Naturally enough the average ratepayer thinks that he may as well get something when he gets the chance out of the rates, as he has to pay for such a number of things which are of no use to him personally, although of great use to other persons, such as free libraries, wash-houses, and board schools. But it is not fair—and we congratulate the Holbeach Board of Guardians on seeing the point—for ratepayers to make the medical men of the district pay for saving them trouble.

"AMERICAN SPECIALISTS."

George Lilian, Emma Lilian, and Mabel Lilian, their daughter, calling themselves the "Lilian American Herbal Company," were charged at the Ennis Assizes before the Lord Chief Justice of Ireland with obtaining money by false pretences. The prisoners were unqualified medical practitioners. The trial commenced on March 4th, and, as reported in the Clare *Saturday Record* of March 8th, it reads like a scene from "Handy Andy." In the end the jury disagreed and the prisoners were put back to take their trial at the next assizes. George Lilian's bail was fixed at the following amounts:—That on or before March 15th he paid £23 to the Crown Solicitor and that he entered into his own recognisances for £50; Emma Lilian and Mabel Lilian were to enter into their own recognisances of £10 to appear. It will be interesting to see the result of the new trial if it ever comes off.

ADVERTISEMENT.

A CORRESPONDENT has drawn our attention to the fact that the illustrated price catalogue issued by Parke's Drug Stores, Limited, contains a list entitled "Consultants in London." Of course such lists are quite useless to the public, but we do not suppose that the proprietors of Parke's Drug Stores, Limited, know this. The list consists of names only and does not pretend to recommend individual practitioners. It cannot be said to advertise anyone, though one or two medical men are misdescribed in it.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—I am seeking the publicity of THE LANCET to ascertain if there is any home or institution that would be willing to take charge of a poor creature seriously afflicted with chorea. For 20 years this woman, now 35 years of age, has suffered from this terrible malady; though absolutely helpless she is perfectly sane and conscious of her dreadful position. Her father and mother, aged respectively 74 and 75 years, are past work; one delicate sister lives at home and assists to the best of her ability; another sister, in service, out of her earnings gives what help she is able. The invalid herself is in receipt of a pension from the Royal Hospital for Incurables, which is annually augmented by a few kind friends, so that she is in a position to make a small payment if a home can be found for her. Any information or suggestions addressed to the Rev. H. Brass, S. Matthew's Vicarage, Redhill, who has known the family for many years, or to me at Laglands, Reigate, would be much appreciated by

Yours truly,

March 10th, 1902. A. D. WELCH.

MR. YORKE-DAVIES.

MR. N. E. YORKE-DAVIES, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A., L.M. Dub., is singularly unfortunate. In THE LANCET of Nov. 9th, 1901, p. 1313, we called attention to the fact that he had written a long letter in *M. A. P.* of Nov. 2nd lauding his own knowledge and his methods of treatment in cases of obesity. Mr. Yorke-Davies explained that he had written this letter to Mr. T. P. O'Connor as a personal friend and implied that Mr. O'Connor had made a mistake in publishing the letter, and we published this explanation in THE LANCET of Nov. 16th, 1901. At the same time we pointed out that the editor of *Modern Society* had apparently also made a mistake and had published another long letter from Mr. Yorke-Davies about Marienbad and what "I have pointed out for many years." Mr. Yorke-Davies did not explain how this letter came to appear, but only remarked that he thought it hard that lay papers should not advertise medical men. Mr. Yorke-Davies has now broken out in a fresh place, and in the issue of *Modern Society* of March 8th gives his views upon fat people and the coronation. He is much exercised because each person will be allotted only 16 inches of seat-room. He also points out that Professor Schweninger's experience in obesity is entirely borne out by his own. This is curious, for in the article in *M.A.P.* to which we have referred above Mr. Yorke-Davies said: "If a person wants to lose weight advise them to go to the expert who can do it without harm. Many patients of Schweninger whose system of reducing weight is the dry one come to me." This looks rather as if Mr. Yorke-Davies's experience differs from that of Professor Schweninger. This point, however, is of no importance, but Mr. Yorke-Davies proceeds in his old unblushing manner to dilate upon obesity and its treatment and to say, "I have pointed this out for years." "I think it will be admitted that I speak with some authority on the matter. ..... I know your paper circulates among those who make a point of enjoying life, and they will be apt to think me rather a lugubrious preacher, but life has greater and more lasting pleasures than the pleasures of the table." To this last platitude no one can take exception, but Mr. Yorke-Davies must know perfectly well that he owes something to his profession, and it is not fitting that a member of that profession should write to lay papers and practically say, "I am the man to go to for the treatment of obesity." The various bodies from whom Mr. Yorke-Davies has obtained his diplomas might, we think, suggest to him to mend his manners. Of course, the last effusion may have been a private letter to the editor of *Modern Society*, in which case we offer Mr. Yorke-Davies our warmest sympathy on being so constantly misunderstood by editors.

FOUNDLING CHILDREN IN FRANCE.

To the Editors of THE LANCET.

SIRS,—I have read with great interest the article by Dr. Charles Goring on "Foundling Children in France" in your issue of Feb. 22nd, p. 541. Are we to understand, however, that *no* responsibility remains with the parents in such cases—that, in fact, the children are simply given up to the care of the State by the parents? Because, if so, it seems to me to be merely putting a premium on improvidence and immorality.

I am, Sirs, yours faithfully,

Liskeard, Feb. 25th, 1902. WALTER DUNSTAN, M.R.C.S. Eng.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—I should be glad to know of a home for an old gentleman, 82 years of age. He is able to get about and to look after himself. His health is fairly good. He suffers from recurrent attacks of stricture, but is able to relieve himself with the catheter. His friends would pay about 5*s.* weekly. Thanking you in anticipation,

I am, Sirs, yours faithfully,

R. I. W.

The Limes, Hoe-street, Walthamstow, N.E., Feb. 26th, 1902.

CIGARETTES MADE WITH SPECIALLY PURE PAPER.

IN an assortment of cigarettes sent to us for examination by Messrs. Baron and Co. of 1, Piccadilly, W., a special kind of paper is used as the wrapper which is said to be made from the purest material possible. Our analysis confirms this statement. The paper yields not more than 6 per cent. of ash, consisting chiefly of calcium carbonate, while the weight of each wrapper only just exceeds half a grain. The wrapper labeled "Parasimos" has a design upon it which we find to be in Dutch gold or fine copper leaf. The cigarette marked "King's Guard Argent" contains a very good quality of Dubec tobacco. The lettering on the wrapper is printed in nickel according to our examination. The Pavilion straight-cut cigarette has no metal lettering upon it at all, but chocolate-coloured type. Steps are evidently taken to render these cigarettes free from reproach; the tobacco, both the Virginia and Dubec, is of excellent quality and the paper wrapper is pure, of a minimum weight, burning freely, and yielding no acrid products on combustion.

MANUFACTURE OF OZONE.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged if any reader of THE LANCET can inform me through your columns where a patient of mine can obtain, on loan or otherwise, cheap apparatus for the production of ozone. My patient suffers from purulent bronchitis.

I am, Sirs, yours faithfully,

March 11th, 1902. INQUIRER.

"PHOS" LIGHT.

To the Editors of THE LANCET.

SIRS,—Early in the year I had occasion to travel from 4.30 to 5 P.M. with three children, aged 12, 7, and a year and 10 months, in a "Stamford Hill" omnibus. The baby was tired and fell asleep at once and remained asleep until the end of the journey. The smell from the lamp (Phos light) was so disgusting that both the elder children felt sick and wanted to leave the omnibus.

The elder girl became very pale and sat with her head outside the omnibus to avoid being sick. On reaching home—a few minutes' walk from the omnibus—I found that the baby was not well. He refused all food and was listless. All night he was feverish and restless and cried as though in pain. In the morning we found the right side of his face swollen and the gums of the right side of the upper jaw inflamed. This was followed by ulceration of the gums and the complaint affected in succession the left side of the upper jaw and then both sides of the lower jaw. He was ill for 10 days, feverish, and very restless, and in a good deal of pain, taking very little nourishment. The ulceration was accompanied by fœtor, his breath smelling like the lamp of phosphoretted hydrogen. The fever and ulceration were followed by enlargement of the submaxillary and sublingual glands and a fall in which the back of a chair struck the chin was followed by an abscess. I am, Sirs, yours faithfully,

(Mrs.) L. H. ANDREW BIRD, L.R.C.P. Irel.

De Beauvoir-road, N., March 3rd, 1902.

THE BAEL TREATMENT OF DYSENTERY.

To the Editors of THE LANCET.

SIRS,—Seeing your remarks on my letter which you were so good as to insert in your issue of Jan. 4th last, Messrs. Bathgate of Calcutta, who prepare the dietetic bael to which I referred, write and refer me to the opinions expressed in Watt's "Dictionary of the Economic Products of India," vol. i., pp. 117, et seq., which greatly predominate in favour of the dried bael fruit as a remedy for dysentery and diarrhœa in comparison with the ripe fruit, the latter being chiefly looked upon as a laxative merely. I certainly agree with you nevertheless in the great value of the fresh fruit in cases of dysentery. I have no experience of Squire and Sons' preparation from the fresh fruit which, from what you say, must be excellent, but I have known Bathgate's preparation, their dietetic bael, which from their letter I presume they prepare from dried unripe fruit, to work marvellous cures. So the inference is that preparations such as Squire's and Bathgate's from either the ripe or unripe fruit are alike most excellent remedies. Would it not be well to have a good supply of such valuable remedies for dysentery kept in our field hospitals with sanction given for the most liberal use of the same, whereby many of our soldiers' valuable lives might be saved.—I am, Sirs, yours faithfully,

Southbourne, Feb. 26th, 1902. J. E. B. PARSONS.

OVERPAID INCOME-TAX.

THE Income-tax Adjustment Agency, Limited, writes to remind our readers "that no claim for repayment of tax deducted from rents, dividends, annuities, &c., in respect of the year ended April 5th, 1899, will be allowed unless the same be lodged before April 5th next. Where the income has been received and tax paid a claim can now be made for four years." The Agency states that "with few exceptions, all persons whose incomes do not exceed £700 are entitled to exemptions or abatements, even when the income is said to be 'free of income-tax,' and on an income not exceeding £400 the amount repayable might amount to £42." All claims should be made with the least possible delay, as the time allowed for making some of them is strictly limited, and the Agency will be glad to advise gratuitously on receipt of particulars to the office, 9, 10, and 11, Poultry, London, E.C. A stamped addressed envelope should be inclosed.

THE ACETYLENE LIGHT IN OMNIBUSES.

REFERRING to our annotation on this subject in our issue of March 1st, p. 608, Mr. Thomas H. Lewis, manager to the "Portable Gaslight, Limited," of 109, Victoria-street, Westminster, states that they have a system at present in use on one of the London Road Car Company's omnibuses in which the acetylene is generated in a carbide of calcium cartridge containing a purifier which entirely absorbs phosphoretted and sulphuretted hydrogen before the gas passes from the purifier. This is exactly what, as we suggested, might be done. Assuming that the purifier does its work properly the acetylene would then be deprived of its poisonous properties.

TRAVELLING TIME ALLOWANCE FOR LOCUM-TENENTS.

To the Editors of THE LANCET.

SIRS,—I would like to suggest through your columns that it would be only fair and reasonable in the case of locum-tenents who frequently have to make such long journeys to and fro a post, occupying either way the greater part of a day, that the length of the engagement should be reckoned from the time of starting to the time of return. The work is so uncertain and the wastage so great, whilst the convenience to established men of being suited to their own time for holiday-making, &c., so useful, that the allowance should not be grudged. I am, Sirs, yours faithfully,

March 12th, 1902. LOCUM.

A Forty Years' Subscriber.—There have been a great many references to cremation in THE LANCET during the last 17 or 18 years. Two of these were leading articles—namely, on Feb. 7th, 1885, p. 259, and May 14th, 1898, p. 1338. Among the contributions specially favourable to cremation mention may be made of those which appeared on August 8th, 1891, p. 314; August 15th, 1891, p. 401; and June 17th, 1899, p. 1661. Sir Henry Thompson's book, "Modern Cremation" (Smith, Elder, and Co., fourth edition, 1901, price 2*s.*), should be consulted, and other literature will probably be obtainable from the Cremation Society, 324, Regent-street, London, W.

Docmed can obtain all the details concerning the medical curriculum from the Students' Number of THE LANCET, Sept. 7th, 1901. The average student, from start to finish, takes nearly six years in completing his curriculum. We cannot suggest a way in which our correspondent could earn anything during his student days, nor would he find that he had much spare time if he joined a medical school.

Medico.—Certainly THE LANCET has never recommended this quack treatment. Our correspondent will observe that no detailed reference is made to our columns. Occasionally we, or more often some of our contributors, may speak well of a drug in connexion with a certain disease. Then a quack will make some sort of concoction of this drug and will claim that his nostrum has our approval.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.) West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

WEDNESDAY (19th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.).

THURSDAY (20th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

FRIDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.). West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.), City Orthopædic (2.30 P.M.).

SATURDAY (22nd).—Royal Free (9 A.M. and 2 P.M.), London (2 P.M.) Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.), Throat, Golden-square (9.30 A.M.)

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (17th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—9 P.M. Mr. A. Pearce Gould: Lettsomian Lectures on Certain Diseases of the Blood-vessels. Lecture III. Thrombosis:—Its Rarer Forms, Chronic, Recurrent, Thrombosis of Spermatic, Mesenteric, Innominate, Azygos Veins.

TUESDAY (18th).—CHELSEA CLINICAL SOCIETY (Jenner Institute of Preventive Medicine, Chelsea-gardens, Grosvenor-road, S.W.).—8.30 P.M. Annual Clinical Debate:—Cancer, its Nature, Origin, and General Principles of Treatment. The following, among others, will take part in the discussion—Sir Wm. M. Banks, Mr. A. Pearce Gould, Mr. A. W. Mayo Robson, Mr. A. M. Sheild, Dr. A. B. Blacker (The present position of treatment by means of X Rays and Ultra-violet Rays, with demonstration of apparatus).

PATHOLOGICAL SOCIETY OF LONDON (Laboratories of the Royal Colleges of Physicians and Surgeons).—8 P.M. Laboratory Meeting. Dr. F. W. Pavy, Dr. T. G. Brodie, and Dr. R. L. Sian: Phloridzin Glycosuria.—Mr. W. Edmunds: Histological Changes in the Nervous System following Excision of the Thyroid.—Dr. Bain: The Role of the Liver and Spleen in the Destruction of the Blood Corpuscles.—Dr. Dixon and Dr. Brodie: The Effect of Suprarenal Extract upon the Pulmonary Circulation.

WEDNESDAY (19th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—7.30 P.M. Mr. A. Earland: Exhibition of Foraminifera. BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Discussion on Chronic Affections of the

Kidney and Morbid Conditions of the Urine arising therefrom, in relation to Balneological, Climatic and Dietetic Treatment (opened by Dr. H. Cumming, Torquay). Dr. T. Williams, Dr. S. Thompson, Dr. B. Davies (Llandrindod), Dr. Leon (Sidmouth), Dr. J. Groves (Carisbrook), Dr. Luff, Dr. F. Fox, Dr. Berry (Ramsgate), Dr. Armstrong (Buxton), Dr. Wellesley-Garrett (Leamington), Dr. Mahomed (Bournemouth), Dr. Havell (Felixstowe), Dr. R. Burnet, Dr. A. Morison, the President, and others are expected to take part in the discussion.

THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—8 P.M. Discussion on the Collection and Disposal of Refuse in Large Towns (opened by Mr. H. P. Boulnois).

THURSDAY (20th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Clinical Cases will be shown by Mr. W. Cheyne, Mr. J. Clarke, Dr. A. Thorne, Dr. R. Russell, Dr. L. Guthrie, Mr. E. Roughton, and others.

FRIDAY (21st).—EPIDEMIOLOGICAL SOCIETY (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Paper:—Dr. Daniels: Infantile Mortality in the Tropics.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (17th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Stewart: Organs of Respiration.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. F. Payne: Clinique. (Skin.)
POST-GRADUATE COLLEGE (Lecture-room, West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. S. Taylor: Diagnosis of Small-pox.

TUESDAY (18th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. F. T. Roberts: The Comprehensive Study of Thoracic Phthisis. (Lumleian Lecture.)
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. G. Rankin: Clinique. (Medical.)
NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Dr. A. Turner: Peripheral Neuritis.

WEDNESDAY (19th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Stewart: Organs of Respiration.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Berry: Clinique. (Surgical.)
CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL (Gray's Inn-road, W.C.).—8 P.M. Mr. C. Nourse: Cases illustrating the Correlation of Diseases of the Throat, the Nose, and the Ear.

THURSDAY (20th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. F. T. Roberts: The Comprehensive Study of Thoracic Phthisis. (Lumleian Lectures.)
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson, jun.: Clinique. (Surgical.)
THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Still: Convulsive Conditions in Infants.
ROYAL LONDON OPHTHALMIC HOSPITAL (Moorfields, City-road).—4.30 P.M. Clinical Demonstration (open to all Practitioners).

FRIDAY (21st).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Stewart: Organs of Respiration.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. T. Collins: Clinique. (Eye.)

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1901, which was completed with the issue of Dec. 28th, and the Title-page to the Volume, were given in THE LANCET of Jan 4th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1901 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid and *not* to THE LANCET Offices.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 13th, 1902.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Mar. 7	29·92	S.	...	62	53	35	37	38	Foggy
,, 8	29·90	S.W.	...	63	53	38	45	46	Raining
,, 9	29·75	W.	0·01	85	52	46	49	50	Fine
,, 10	29·93	S.E.	0·06	54	51	44	44	45	Overcast
,, 11	30·00	S.W.	...	53	51	44	45	46	Overcast
,, 12	30·03	S.	...	81	54	44	44	45	Cloudy
,, 13	30·05	S.W.	...	81	55	42	42	45	Overcast

During the week marked copies of the following newspapers have been received:—*Cornishman, Cornish Telegraph, Torquay Directory and South Devon Journal, Hertfordshire Mercury, Windsor and Eton Express, Portadown News, Sunday Magazine, Kensington News, Daily Telegraph, St. James's Gazette, Ibero-Americana de Ciencias Médicas, Pharmaceutical Journal, Manchester Guardian, Dublin Evening Telegraph, Southampton Echo, Stafford Advertiser, Coventry Herald, Belfast News, Birmingham Daily Mail, Municipal Reformer, Allegemeine Medicinische Central-Zeitung, Il Policlinico, Halifax Courier, Aberdeen Free Press, Rivista Medica de San Paulo, Echo, Standard, Bristol Mercury, Liverpool Daily Post, La Caducée, Hong-Kong Weekly Press, Herts Advertiser, Times of India, Reading Mercury, Mining Journal, Local Government Chronicle, &c.*

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